This service manual is for HTS3541 first Generation model,
which is different from the previous generation models.
For First Generation model the serial number
begin with KX1xxxxxxxxxx.

Home Theater DVD Player HTS3541/05/12/51/55/78/79/93/98/X78

Service
Service
Service

Service Manual

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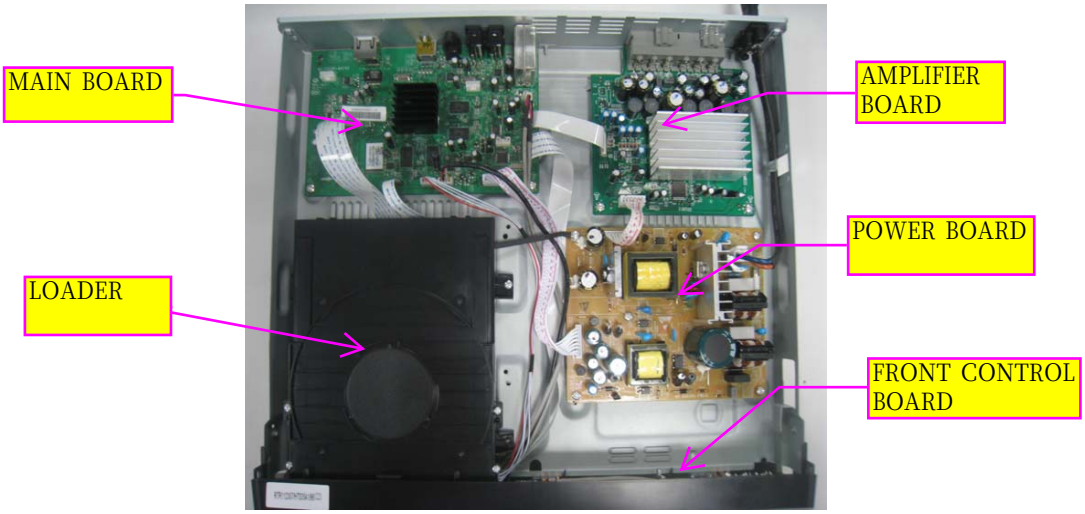
**CLASS 1
LASER PRODUCT**

Published by RY&LLL - 1130 BU AVM Printed in The Netherlands Subject to modification GB 3139 785 35832

Version 1.2

PHILIPS

PCB BOARD LOCATION:



Version Variation

Type/Versions / Features	HTS3541								
	/05	/12	/51	/55	/78	/79	/93	/98	X/78
Output Power- 300W	X	X	X	X	X	X	X	X	X
Voltage(220~240V~)	X	X	X			X	X		
Voltage(110~240V~)				X	X			X	X
MP3 LINK	X	X	X	X	X	X	X	X	

Repair Scenario Matrix

Type/Versions / Board in used	HTS3541								
	/05	/12	/51	/55	/78	/79	/93	/98	X/78
Main Board	C	C	C	C	C	C	C	C	C
Front Control Board	B	B	C	C	C	C	C	C	C
Amplifier Board	B	B	C	C	C	C	C	C	C
Power Board	B	B	C	C	C	C	C	C	C

*Bd:Board Level Replacement

*C:Component Level Repair

HTS3541/05/12/51/55/78/79/X78:

Product Specifications:

Note

- Specifications and design are subject to change without notice.

Region codes

The type plate on the back or bottom of the home theatre shows which regions it supports.

Country	DVD	BD
Europe, United Kingdom	ALL 2	B
Asia Pacific, Taiwan, Korea	ALL 3	A
Latin America	ALL 4	A
Australia, New Zealand	ALL 4	B
Russia, India	ALL 5	C
China	ALL 6	C

Media formats

- AVCHD, BD, BD-R/ BD-RE, BD-Video, DVD-Video, DVD+R/+RW, DVD-R/-RW, DVD+R/-R DL, CD-R/CD-RW, Audio CD, Video CD/SVCD, Picture files, MP3 media, WMA media, DivX Plus HD media, USB storage device

File formats

- Audio: .aac, .mka, .mp3, .wma, .wav
- Video: .avi, .divx, .mp4, .mkv, .asf, .mpg, .mpeg
- Picture: .jpg, .jpeg, .gif, .png

Amplifier

- Total output power: 300 W RMS (30% THD)
- Frequency response: 20 Hz-20 kHz / ±3 dB
- Signal-to-noise ratio: > 65 dB (CCIR)/ (A-weighted)
- Input sensitivity:
  - AUX: 2 V
  - Music iLink: 1 V

Video

- Signal system: PAL/NTSC
- HDMI output: 480i/576i, 480p/576p, 720p, 1080i, 1080p, 1080p24

Audio

- S/PDIF Digital audio input:
  - Coaxial: IEC 60958-3
  - Optical: TOSLINK
- Sampling frequency:
  - MP3: 32 kHz, 44.1 kHz, 48 kHz
  - WMA: 44.1 kHz, 48 kHz
- Constant bit rate:
  - MP3: 32 kbps - 320 kbps
  - WMA: 48 kbps - 192 kbps

Radio

- Tuning range:
  - Europe/Russia/China: FM 87.5-108 MHz (50 kHz)
  - Asia Pacific/Latin America: FM 87.5-108 MHz (50/100 kHz)
- Signal-to-noise ratio: FM 50 dB
- Frequency response: FM 200 Hz-12.5 kHz / ±6 dB

USB

- Compatibility: Hi-Speed USB (2.0)
- Class support: USB Mass Storage Class (MSC)
- File system: FAT16, FAT32, NTFS
- Maximum memory support: < 160 GB

Main unit

- Power supply:
  - Europe/China/Russia/India: 220-240 V~, 50 Hz
  - Latin America/Asia Pacific: 110-240 V~, 50-60 Hz
- Power consumption: 60 W
- Standby power consumption: ≤ 0.9 W
- Dimensions (WxHxD): 360 x 58 x 325 mm
- Weight: 2.4 kg

Subwoofer

- Output power: 50 W RMS (30% THD)
- Impedance: 4 ohm
- Speaker drivers: 133 mm (5.25") woofer
- Dimensions (W x H x D): 160 x 265 x 265 mm
- Weight: 2.5 kg
- Cable length: 3 m

Speakers

Centre speaker:

- Output power: 50 W RMS (30% THD)
- Speaker impedance: 4 ohm
- Speaker drivers: 1 x 63.5 mm (2.5") woofer
- Dimensions (W x H x D): 159 x 84.5 x 80 mm
- Weight: 0.35 kg
- Cable length: 2 m

Front/Rear speaker:

- Output power: 4 x 50 W RMS (30% THD)
- Speaker impedance: 4 ohm
- Speaker drivers: 1 x 63.5 mm (2.5") woofer
- Dimensions (WxHxD): 84.5 x159 x 80 mm
- Weight (front speakers): 0.35 kg/each
- Weight (rear speakers): 0.35 kg/each
- Cable length (front speakers): 3 m
- Cable length (rear speakers): 7 m

Remote control batteries

- 2 x AAA-R03-1.5 V

Laser

- Laser Type (Diode): InGaN/AlGaN (BD), AlGaInP (DVD/CD)
- Wave length: 405 +7 nm/-7 nm (BD), 655 +10 nm/-10 nm (DVD), 790 +10 nm/-20 nm (CD)
- Output power (Max. ratings): 20 mW (BD), 6 mW (DVD), 7 mW (CD)

HTS3541/93/98:

Product Specifications:

Note

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Asia Pacific, Taiwan, Korea	ALL 3	A
Latin America	ALL 4	A
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Russia, India	ALL 5	C
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Media formats

- AVCHD, BD, BD-R/ BD-RE, BD-Video, DVD-Video, DVD+R/+RW, DVD-R/-RW, DVD+R/-R DL, CD-R/CD-RW, Audio CD, Video CD/SVCD, Picture files, MP3 media, WMA media, DivX Plus HD media, USB storage device

File formats

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  - .avi, .divx, .mp4, .mkv, .asf, .wmv, .mpg, .mpeg
  - .rmvb, .rm
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- Signal-to-noise ratio: FM 50 dB
- Frequency response: FM 200 Hz-12.5 kHz / ±6 dB

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- Class support: USB Mass Storage Class (MSC)
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- Dimensions (WxHxD): 360 x 58 x 325 mm
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- Output power: 50 W RMS (30% THD)
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- Weight: 2.50 kg
- Cable length: 3 m

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- Output power (Max. ratings): 20 mW (BD), 6 mW (DVD), 7 mW (CD)

Safety instruction, Warning & Notes

Safety instruction

1. General safety

Safety regulations require that during a repair:

. Connect the unit to the mains via an isolation transformer.

. Replace safety components indicated by the symbol ⚠, only by components identical to the original ones. Any other component substitution (other than original type) may increase risk of fire or electrical shock hazard.

Safety regulations require that after a repair, you must return the unit in its original condition. Pay, in particular, attention to the following points:

. Route the wires/cables correctly, and fix them with the mounted cable clamps.

. Check the insulation of the mains lead for external damage.

. Check the electrical DC resistance between the mains plug and the secondary side:

1) Unplug the mains cord, and connect a wire between the two pins of the mains plug.
2) Set the mains switch the "on" position (keep the mains cord unplug).
3) Measure the resistance value between the mains plug and the front panel, controls, and chassis bottom.
4) Repair or correct unit when the resistance measurement is less than 1MΩ.
5) Verify this, before you return the unit to the customer/user (ref. UL-standard no. 1492).
6) Switch the unit "off", and remove the wire between the two pins of the mains plug.

2.Laser safety

This unit employs a laser. Only qualified service personnel may remove the cover, or attempt to service this device (due to possible eye injury).

Laser device unit

Type : Semiconductor laser GaAlAs

Wavelength : 650nm (DVD)

: 780nm (VCD/CD)

Output power : 7mW (DVD)

: 10mW (DVD /CD)

Beam divergence: 60 degree

Note: Use of controls or adjustments or performance of procedure other than those specified herein, may result in hazardous radiation exposure. Avoid direct exposure to beam.

Warning

1.General

. All ICs and many other semiconductors are susceptible to electrostatic discharges (ESD). Careless handing during repair can reduce life drastically. Make sure that, during repair, you are at the same potential as the mass of the set by a wristband with resistance. Keep components and tools at this same potential. Available ESD protection equipment:

1) Complete kit ESD3 (small tablemat, wristband, connection box, extension cable and earth cable) 4822 310 10671.
2) Wristband tester 4822 344 13999.

. Be careful during measurements in the live voltage section. The primary side of the power supply , including the heat sink, carries live mains voltage when you connect the player to the mains (even when the player is “off”!). It is possible to touch copper tracks and/or components in this unshielded primary area, when you service the player. Service personnel must take precautions to prevent touching this area or components in this area. A “lighting stroke” and a stripe-marked printing on the printed wiring board, indicate the primary side of the power supply.

. Never replace modules, or components, while the unit is “on”.

2. Laser

. The use of optical instruments with this product, will increase eye hazard.

. Only qualified service personnel may remove the cover or attempt to service this device, due to possible eye injury.

. Repair handing should take place as much as possible with a disc loaded inside the player.

. Text below is placed inside the unit, on the laser cover shield:

CAUTION: VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN, AVOID EXPOSURE TO BEAM.

Notes: Manufactured under licence from Dolby Laboratories. The double-D symbol is trademarks of Dolby Laboratories, Inc. All rights reserved.

Service Hints

CAUTION:

CHARGED CAPACITORS ON THE SERVO BOARD MAY DAMAGE THE DRIVE ELECTRONICS WHEN CONNECTING A NEW DRIVE. THAT`S WHY, BESIDES THE SAFETY MEASURES LIKE

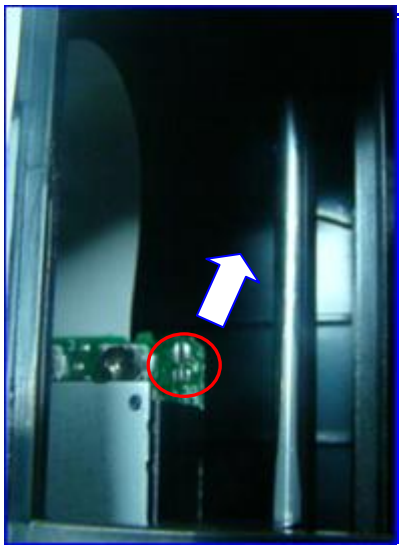
- **SWITCH OFF POWER SUPPLY**
- **ESD PROTECTION**

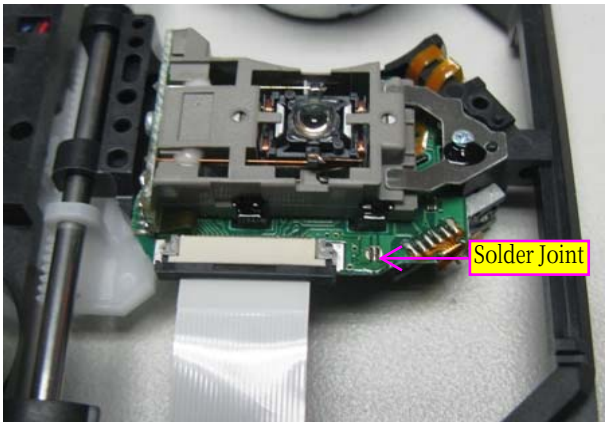
ADDITIONAL ACTIONS MUST BE TAKEN BY THE PERAIR TECHNICAN

1. How to replace a defective loader?

Step1: Dismantling the loader to access the ESD protection point;

Step2: Remove the solder joint on the ESD protection point;





（NOTICE: REMOVE THE SOLDER JOINT AS THE WHITE ARROW DIRECTION IN ABOVE PICTURE）

Step3: Connect the 4PIN cable with the base. (Figure 2/3)

Step4: Take a label (can be reused) to cover the pane to prevent dust and touching the protection point (Figure 4)

1. Loader

2. 4pin base

3. Insert 4pin cable

Note: The ESD protection point needs to be soldered if:
1). it is still under good condition;
2). It is defective but need to sent back for failure analysis to support back charging evidence.
This is also applicable to all partnership workshops.

2. Reference about the loader:

DESCRIPTION	POSITION
BLU-RAY LOADER L9829+414H08	OPU
LOADER LABEL	LABEL
4PIN CONNECTOR L=260MM	4P

1). The ASSY-loader includes three components, as below picture:

The loader

The label

The cable

The ASSY-loader

2). top and bottom pictures :

TOP

Bottom

Notes

Lead-Free requirement for service

INDENTIFICATION:

Regardless of special logo (not always indicated) Pb

One must treat all sets from 1.1.2005 onwards, according next rules.

Important note: In fact also products a little older can also be treated in this way as long as you avoid mixing solder-alloys (leaded/ lead-free). So best to always use SAC305 and the higher temperatures belong to this.

Due to lead-free technology some rules have to be respected by the workshop during a repair:

- Use only lead-free solder alloy Philips SAC305 with order code 0622 149 00106. If lead-free solder-paste is required, please contact the manufacturer of your solder-equipment. In general use of solder-paste within workshops should be avoided because paste is not easy to store and to handle.
- Use only adequate solder tools applicable for lead-free solder alloy. The solder tool must be able
  - To reach at least a solder-temperature of 400°C,
  - To stabilize the adjusted temperature at the solder-tip
  - To exchange solder-tips for different applications.
- Adjust your solder tool so that a temperature around 360°C – 380°C is reached and stabilized at the solder joint. Heating-time of the solder-joint should not exceed ~ 4 sec. Avoid temperatures above 400°C otherwise wear-out of tips will rise drastically and flux-fluid will be destroyed. To avoid wear-out of tips switch off un-used equipment, or reduce heat.
- Mix of lead-free solder alloy / parts with leaded solder alloy / parts is possible but PHILIPS recommends strongly to avoid mixed
  solder alloy types (leaded and lead-free). If one cannot avoid, clean carefully the
  solder-joint from old solder alloy and re-solder with new solder alloy (SAC305).
- Use only original spare-parts listed in the Service-Manuals. Not listed standard-material (commodities) has to be purchased at external companies.
- Special information for BGA-ICs:
  - always use the 12nc-recognizable soldering temperature profile of the specific BGA (for de-soldering always use highest lead-free temperature profile, in case of doubt)
  - lead free BGA-ICs will be delivered in so-called 'dry-packaging' (sealed pack including a silica gel pack) to protect the IC against moisture. After opening, dependent of MSL-level seen on indicator-label in the bag, the BGA-IC possibly still has to be baked dry. This will be communicated via AYS-website.
  Do not re-use BGAs at all.
- For sets produced before 1.1.2005, containing leaded soldering-tin and components, all needed spare-parts will be available till the end of the service-period. For repair of such sets nothing changes.
- On our website:
  www.atyourservice.ce.Philips.com

You find more information to:

BGA-de-/soldering (+ baking instructions)
Heating-profiles of BGAs and other ICs used in Philips-sets

You will find this and more technical information within the "magazine", chapter "workshop news".

For additional questions please contact your local repair-helpdesk.

EN Before using your product, read all accompanying safety information

DA Læs alle medfølgende sikkerhedsoplysninger, inden du tager produktet i brug

DE Lesen Sie vor Verwendung dieses Produkts alle begleitenden Sicherheitsinformationen

EL Πριν χρησιμοποιήσετε το προϊόν, διαβάστε όλες τις παρεχόμενες πληροφορίες ασφάλειας

ES Antes de usar el producto, lea toda la información de seguridad adjunta

FI Lue kaikki turvallisuustiedot ennen tuotteen käyttöä

FR Avant d'utiliser votre produit, lisez l'intégralité des consignes de sécurité jointes

IT Prima di utilizzare il prodotto, leggere tutte le relative informazioni sulla sicurezza

NL Lees voordat u het product gaat gebruiken eerst alle bijbehorende veiligheidsinformatie

NO Les all vedlagt sikkerhetsinformasjon før du bruker produktet

PT Antes de utilizar o produto, leia todas as informações de segurança que o acompanham

SV Innan du använder produkten ska du läsa all tillhörande säkerhetsinformation

TR Ürününüzü kullanmadan önce ilgili tüm güvenlik bilgilerini okuyun

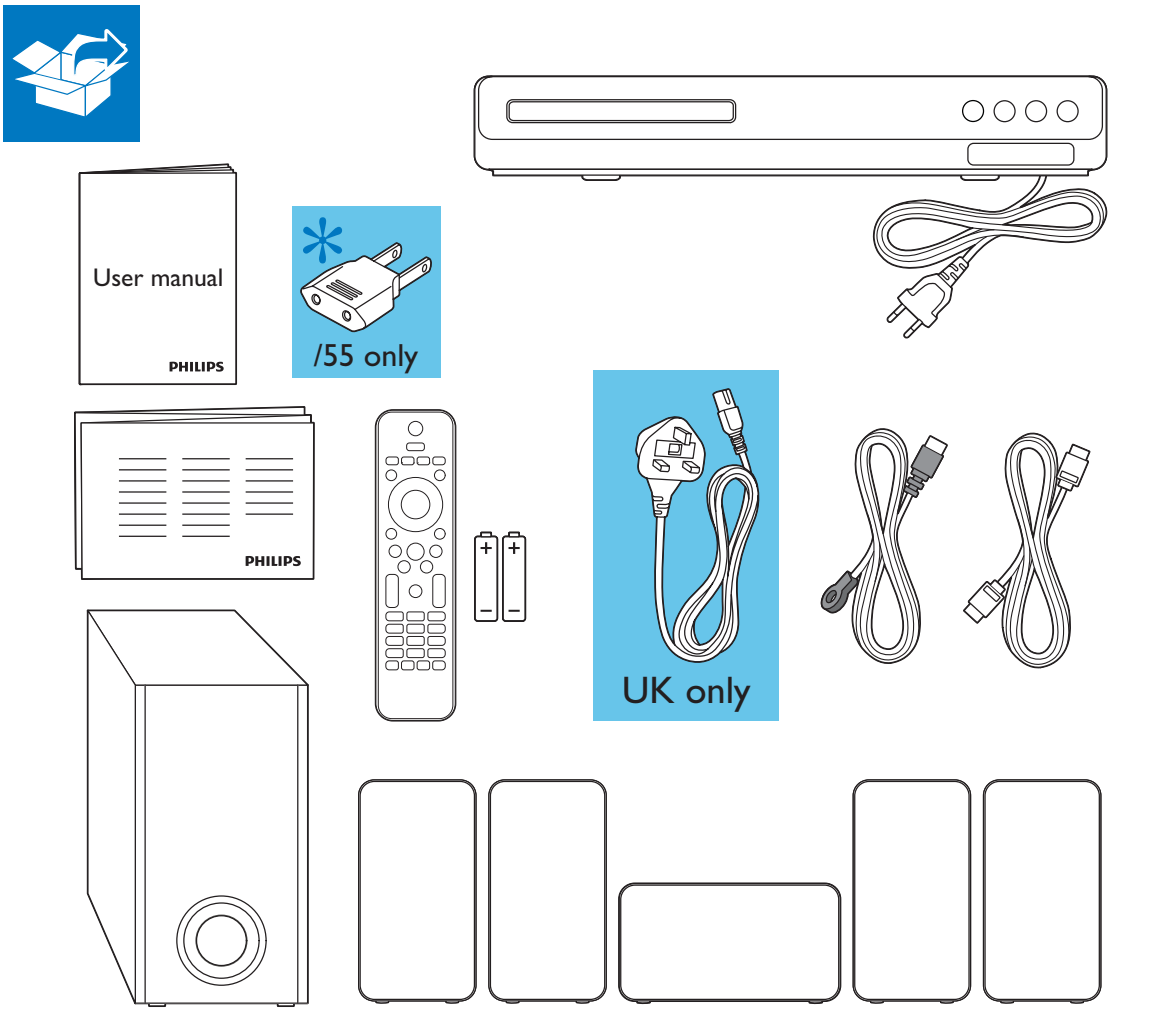
CS Před použitím produktu si přečtěte doprovodné bezpečnostní informace

HU A termék használata előtt alaposan olvassa el a mellékelt biztonsági tudnivalókat

PL Przed rozpoczęciem korzystania z produktu należy zapoznać się z informacjami dotyczącymi bezpieczeństwa

RO Înainte de a utiliza acest produs, citiţi toate informaţiile de siguranţă care îl însoţesc

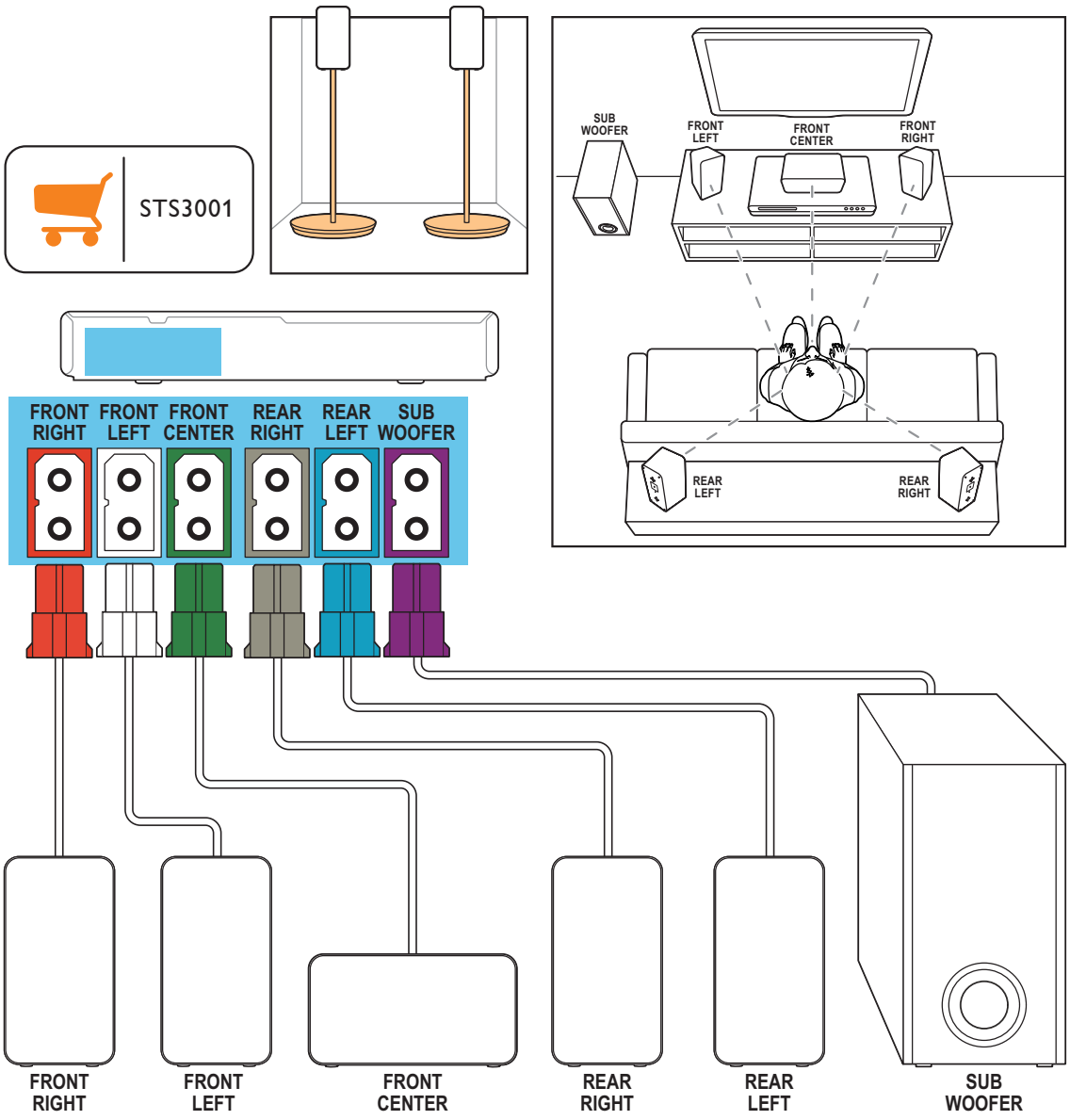
SK Pred použitím produktu si prečítajte všetky sprievodné bezpečnostné informácie

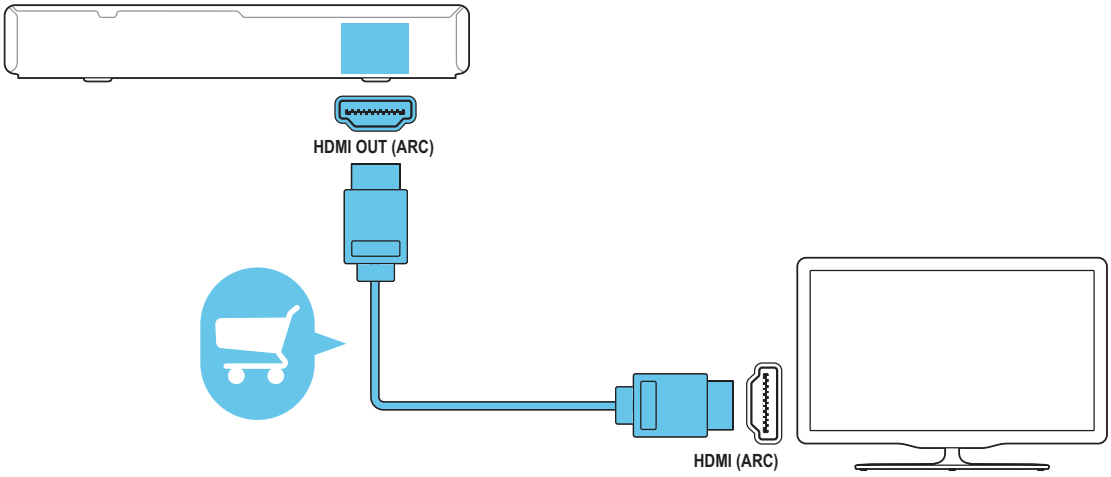


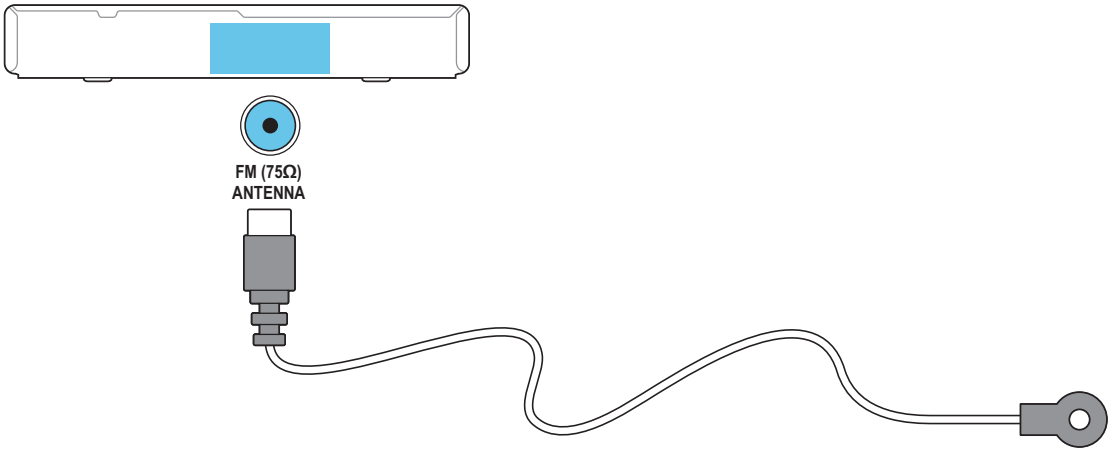
* Adaptador fornecido como acessório não deverá ser usado nas redes elétricas do Brasil, seu uso é destinado exclusivamente a outros países da América Latina.

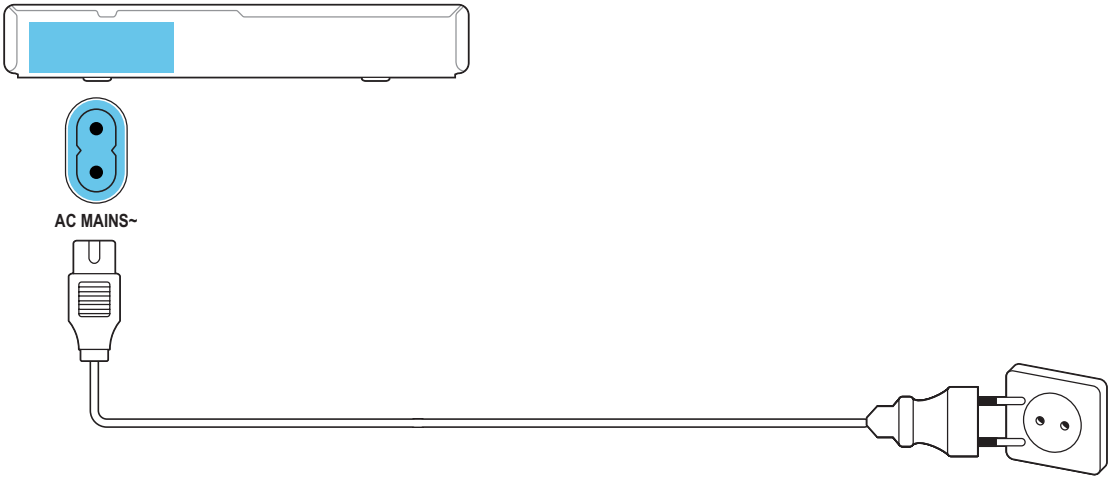
1

EN Connect the home theater
DA Tilslut hjemmebiografen
DE Anschließen des Home Entertainment-Systems
EL Συνδέστε το home cinema
ES Conecta el sistema de cine en casa
FI Kotiteatterin liitännät
FR Connecter les enceintes au Home Cinéma
IT Collegamento del sistema Home Theater
NL Sluit de home cinema aan
NO Koble til hjemmekinoanlegget
PT Efectuar as ligações ao sistema de cinema em casa
SV Anslut hemmabiosystemet
TR Ev sinemasını bağlayın
CS Připojte domácí kino
HU A házimozi csatlakoztatása
PL Podłączanie zestawu kina domowego
RO Conectaţi sistemul home theater
SK Pripojenie k domácemu kinu




HDMI OUT (ARC)
HDMI (ARC)

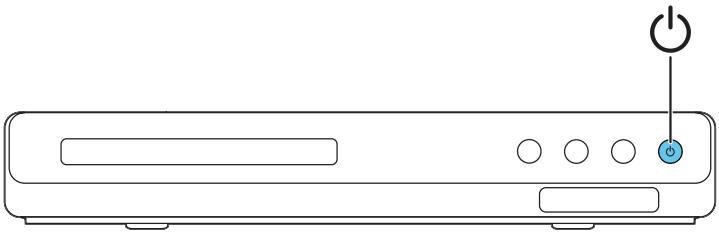

FM (75Ω)
ANTENNA


AC MAINS~

2

EN Switch on the home theater
DA Tænd for hjemmebiografen
DE Einschalten des Home Entertainment-Systems
EL Ενεργοποιήστε το home cinema
ES Enciende el sistema de cine en casa
FI Virran kytkeminen kotiteatteriin
FR Mettre sous tension le Home Cinéma
IT Accensione del sistema Home Theater
NL Schakel de home cinema in
NO Slå på hjemmekinoanlegget
PT Ligar o sistema de cinema em casa
SV Sätt på hemmabiosystemet
TR Ev sinemasını açın
CS Zapněte domácí kino
HU A házimozi bekapcsolása
PL Włączanie zestawu kina domowego
RO Porniţi sistemul home theater
SK Zapnutie domáceho kina

1



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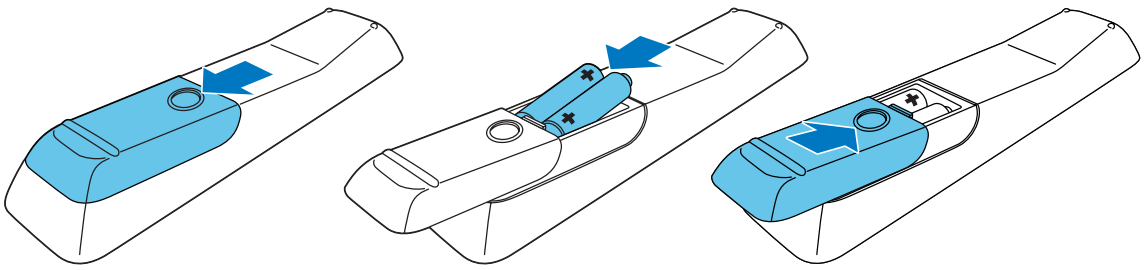
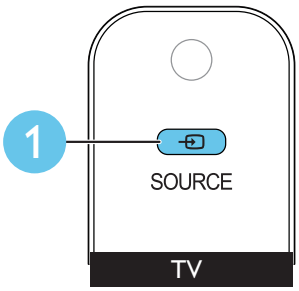
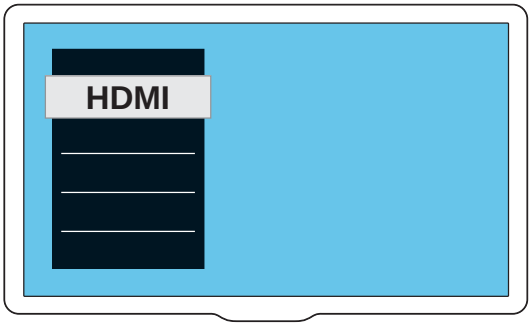
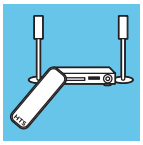


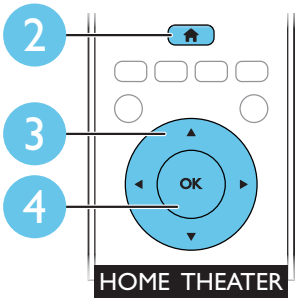
3

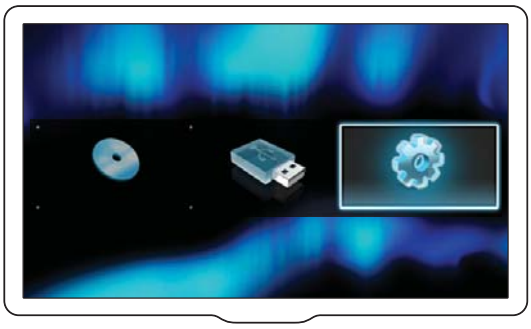
EN Complete the first time setup
DA Fuldfør den indledende opsætning
DE Abschließen der Ersteinrichtung
EL Ολοκληρώστε τη ρύθμιση για πρώτη φορά
ES Finaliza la configuración inicial
FI Ensiasennuksen suorittaminen loppuun
FR Effectuer la configuration initiale
IT Completamento della configurazione iniziale
NL Voltooi de eerste installatie
NO Fullføre den første konfigureringen
PT Executar a configuração inicial
SV Slutför förstagångsinställningen
TR İlk kullanım öncesi kurulumunu tamamlayın
CS Dokončili jste nastavení při prvním zapnutí
HU Az első üzembe helyezés
PL Pierwsza konfiguracja
RO Realizaţi prima configurare
SK Dokončenie prvého nastavenia

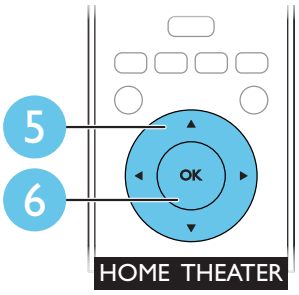


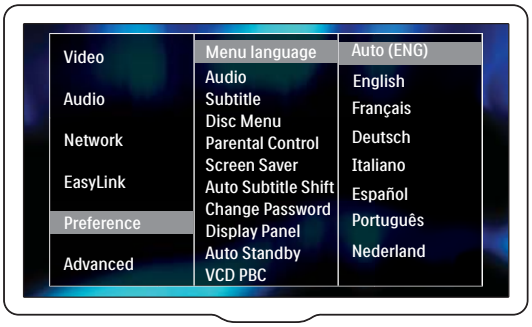






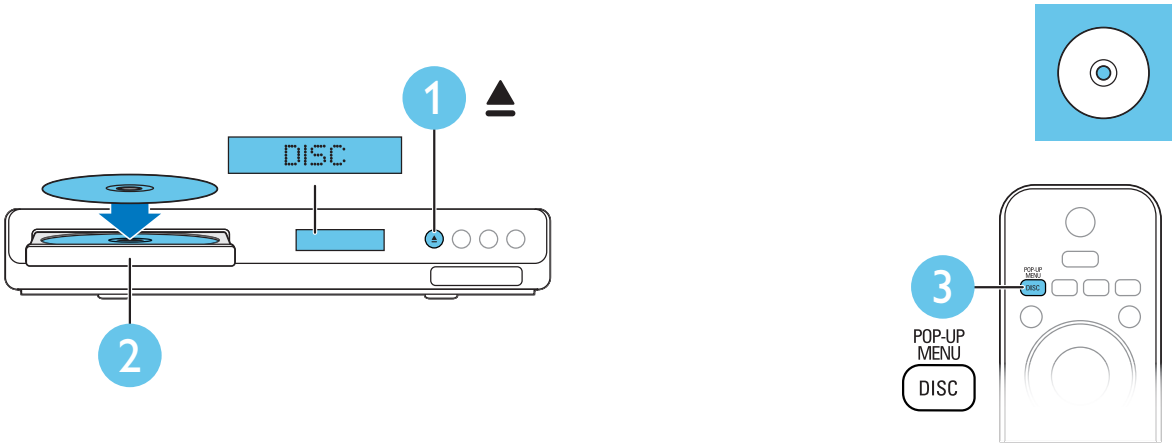


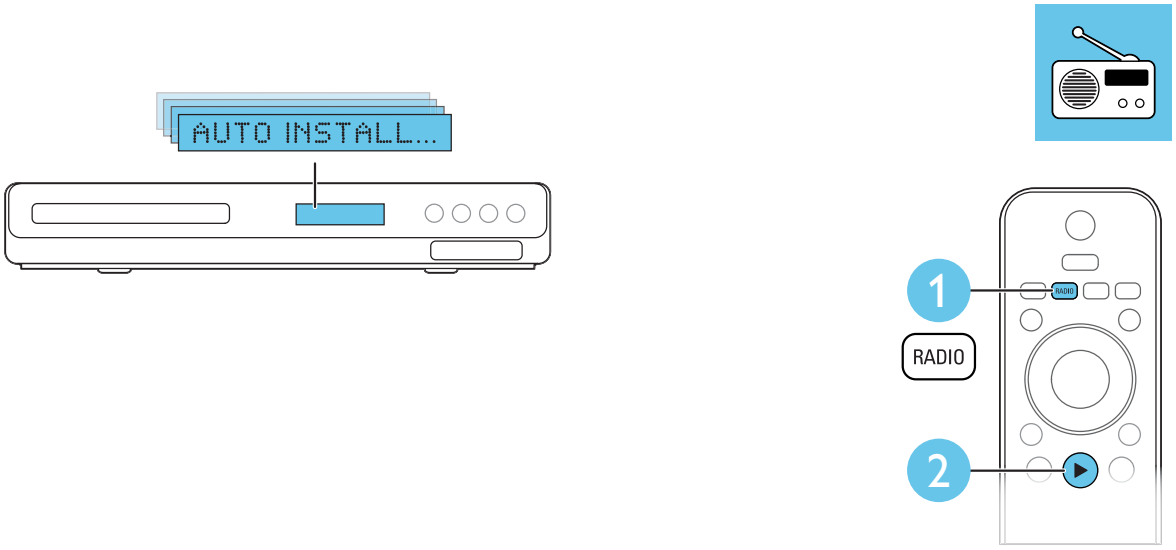


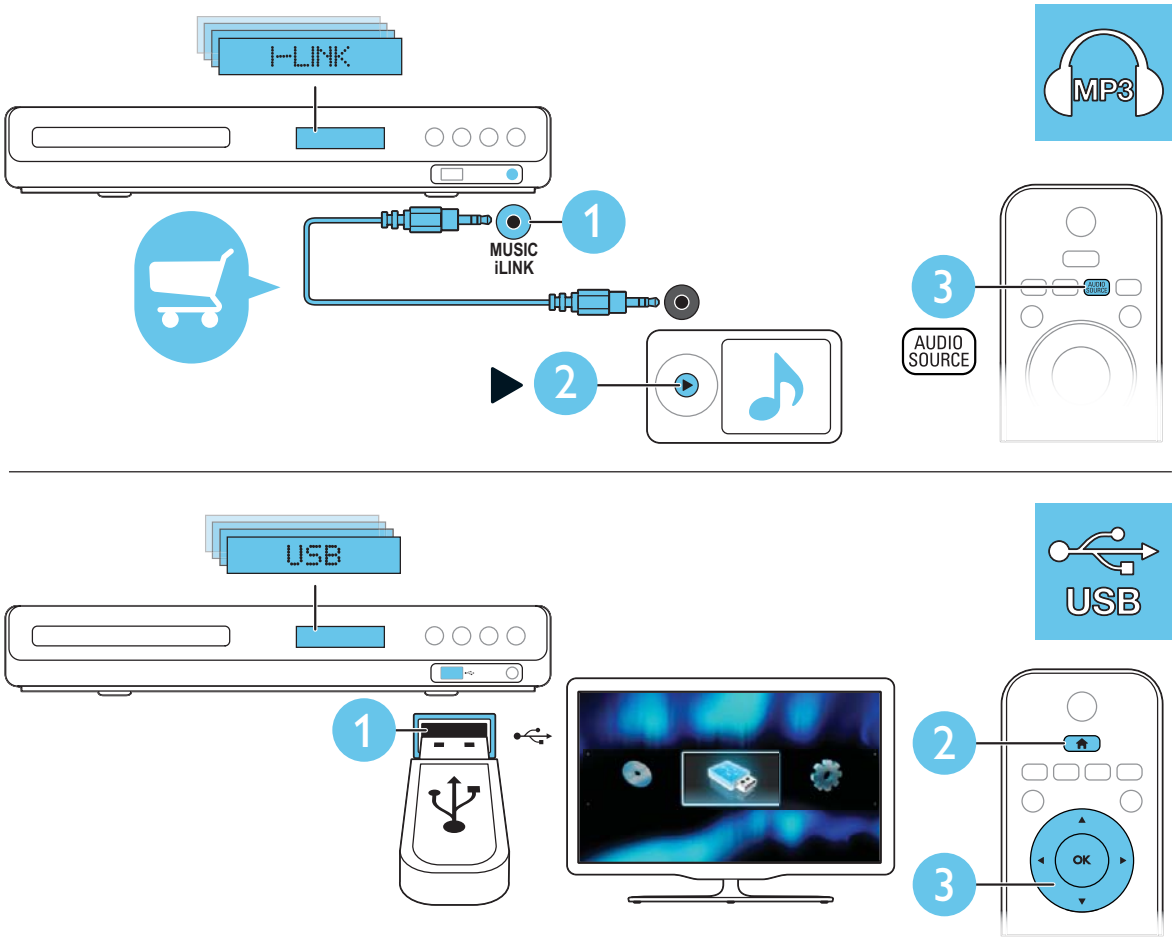


4

EN Use your home theater
DA Brug af din hjemmebiograf
DE Verwenden des Home Entertainment-Systems
EL Χρησιμοποιήστε το home cinema
ES Uso del sistema de cine en casa
FI Kotiteatterin käyttäminen
FR Utiliser votre Home Cinéma
IT Utilizzo del sistema Home Theater
NL Uw home cinema bedienen
NO Bruke hjemmekinoanlegget
PT Utilizar o sistema de cinema em casa
SV Använda hemmabiosystemet
TR Ev sinema sisteminin kullanılması
CS Použití domácího kina
HU A házimozi használata
PL Korzystanie z zestawu kina domowego
RO Utilizaţi sistemul home theater
SK Používanie domáceho kina





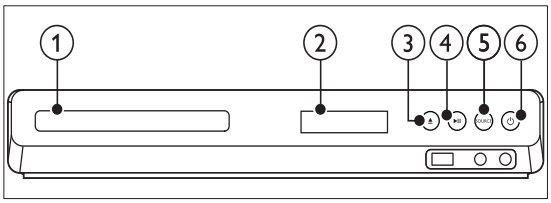

I-LINK
MUSIC
iLINK
1
2
3
AUDIO
SOURCE
MP3
USB
USB
1
2
3
OK

HTS3541/05/12/51/55/78/79/93/98/X78:

Your home theatre

Congratulations on your purchase, and welcome to Philips! To fully benefit from the support that Philips offers, register your home theatre at www.philips.com/welcome.

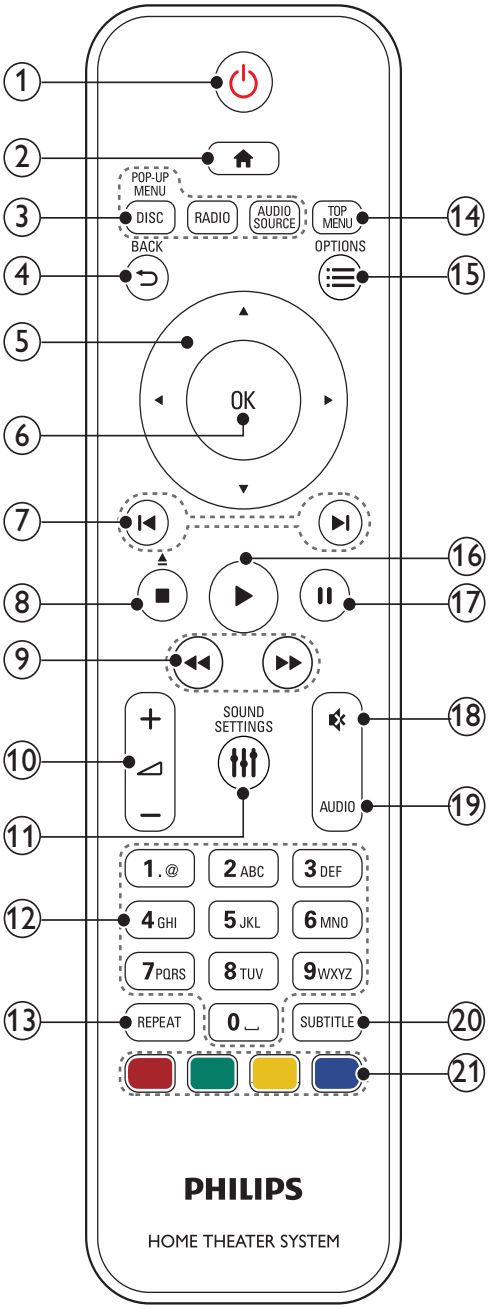
Main unit



1. Disc compartment
2. Display panel
3. ▲ (Open/Close)
   Open or close the disc compartment, or eject the disc.
4. ▶❚❚ (Play/Pause)
   Start, pause or resume play.
5. SOURCE
   Select an audio or video source for the home theatre.
6. ⏻ (Standby-On)
   Switch the home theatre on or to standby.

Remote control

This section includes an overview of the remote control.



① ⏻ (Standby-On)
- Switch the home theatre on or to standby.
- When EasyLink is enabled, press and hold for at least three seconds to switch all connected HDMI CEC compliant devices to standby.

② 🏠 (Home)
Access the home menu.

③ Source buttons
- DISC/POP-UP MENU : Switch to disc source.Access or exit the disc menu when you play a disc.
- RADIO : Switch to FM radio.
- AUDIO SOURCE : Select an audio input source.

④ ⮌ BACK
- Return to a previous menu screen.
- In radio mode, press and hold to erase the current preset radio stations.

⑤ Navigation buttons
- Navigate menus.
- In radio mode, press left or right to start auto search.
- In radio mode, press up or down to tune the radio frequency.

⑥ OK
Confirm an entry or selection.

⑦ ⏮ / ⏭ (Previous/Next)
- Skip to the previous or next track, chapter or file.
- In radio mode, select a preset radio station.

⑧ ■ (Stop) / ⏏ (Eject/Open/Close)
- Stop play.
- Press and hold for three seconds to open or close the disc compartment, or eject the disc.

⑨ ◀◀ / ▶▶ (Fast Backward / Fast Forward)
Search backwards or forwards. Press repeatedly to change the search speed.

⑩ +/- (Volume)
Increase or decrease volume.

⑪ SOUND SETTINGS
Access or exit sound options.

⑫ Alphanumeric buttons
Enter values or letters (using SMS-style entry).

⑬ REPEAT
Select or turn off repeat mode.

⑭ TOP MENU
Access the main menu of a disc.

⑮ OPTIONS
- Access more play options while playing a disc or a USB storage device.
- In radio mode, set a radio station.

⑯ ▶ (Play)
Start or resume play.

⑰ ❚❚ (Pause)
Pause play.

⑱ (Mute)
Mute or restore volume.

⑲ AUDIO
Select an audio language or channel.

⑳ SUBTITLE
Select subtitle language for video.

㉑ Colour buttons
Select tasks or options for Blu-ray discs.

Mechanical and Dismantling Instructions

Dismantling Instruction Detailed information please refer to the model set.

The following guidelines show how to dismantle the player.
Step1: Remove 6 screws around the Top Cover, and then remove the Top Cover (Figure 1).

Sample:HTS3541/98

Figure 1

Step2: If it is necessary to dismantle Loader or Front Panel, the Front door should be removed first. (Figure 2)
Note: Make sure to operate gently otherwise the guider would be damaged.

Please kindly note that dismantle the front door assembly carefully to avoid damage tray and the front door.

Figure 2

Mechanical and Dismantling Instructions

Dismantling Instruction Detailed information please refer to the model set.

Step3 : Dismantle Front Panel, disconnect the connectors (XP6, XP8,XP604), need release 2 snaps of Front Panel & 2 snaps of bottom cabinet , then gently pull the Panel out from the set. (Figure 3)

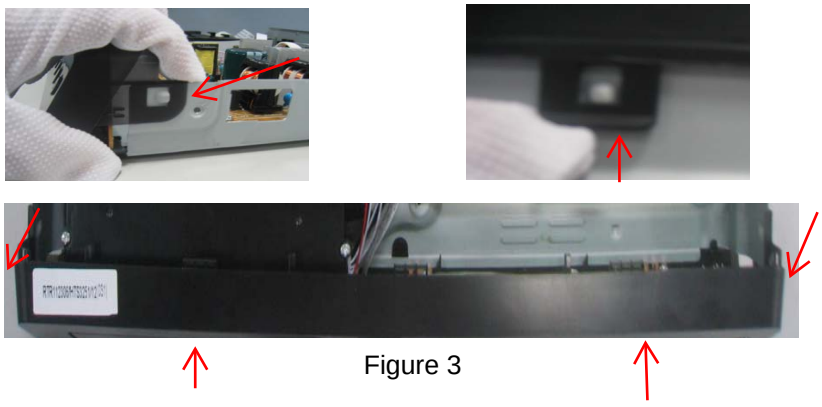


Figure 3

Step4 : Dismantle Front Control Board,remove 5 screws. (Figure 4)

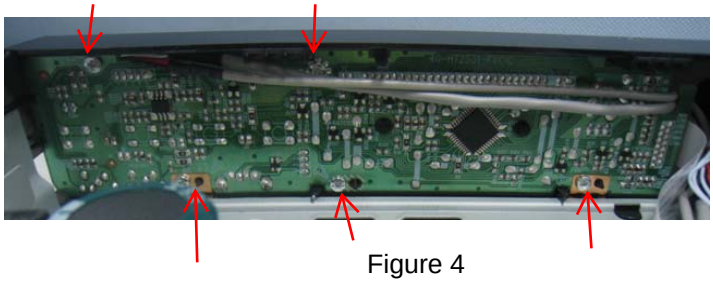


Figure 4

Step5: Dismantle Loader, disconnect the 3 connectors (XP5, XP7, XP10) aiming in the below figure, and remove 2 screws that connects the loader and the bottom cabinet. (Figure 5)

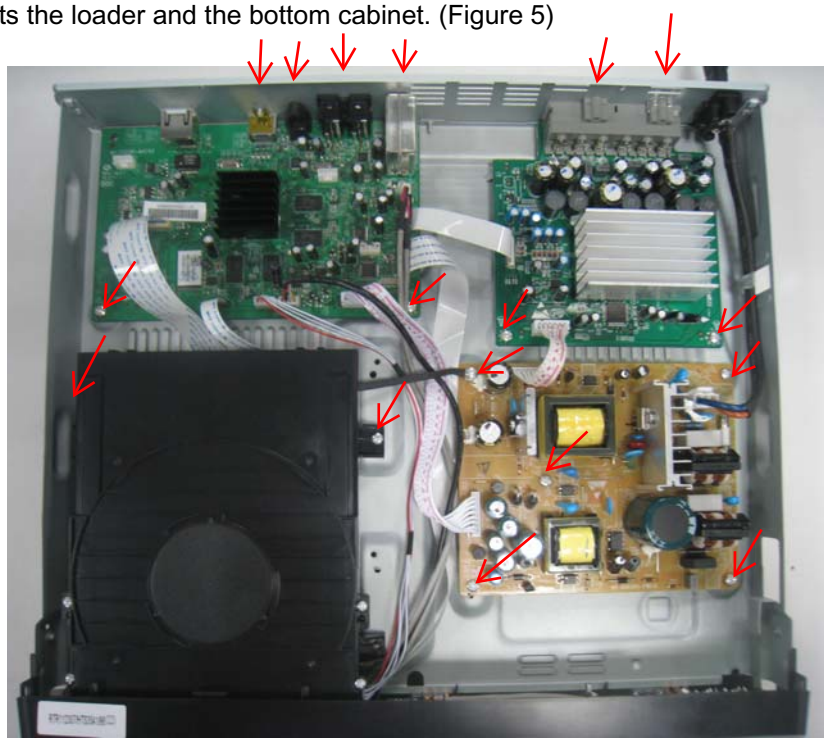


Figure 5

Mechanical and Dismantling Instructions

Dismantling Instruction Detailed information please refer to the model set.

Step6: Dismantle Main Board, first disconnect 2 connectors (XP1, XP13), and then remove 6 screws. (Figure 6)
Step7: Dismantle Power Board, disconnect the connectors XS703 and CN501 on Power Board,then remove 5 screws.(Figure 6)
Step8: Dismantle Amplifier Board, remove 4 screws(Figure 6)

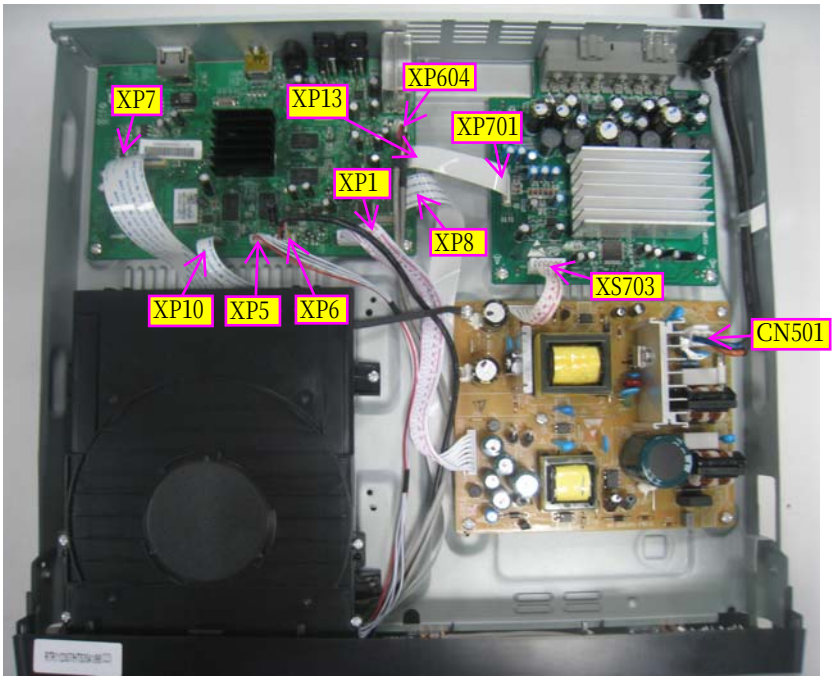


Figure 6

Software upgrade

A. Software upgrade method:

1. Set up a new folder and name it 'UPG' in the root of USB device.
2. Copy the file(HTS_XXXX.bin)which you want to upgrade into the 'UPG' folder
3. Power on the BD Player, after it shows the UI, plug the USB device
4. Select the SETUP Menu, then find and select item 'Advanced'
5. In the item 'Advanced', find and select item 'Software Update', then select item 'USB', please follow the tip to complete the upgrade.

B. Read out the software versions to confirm upgrading

Follow the steps shows below:

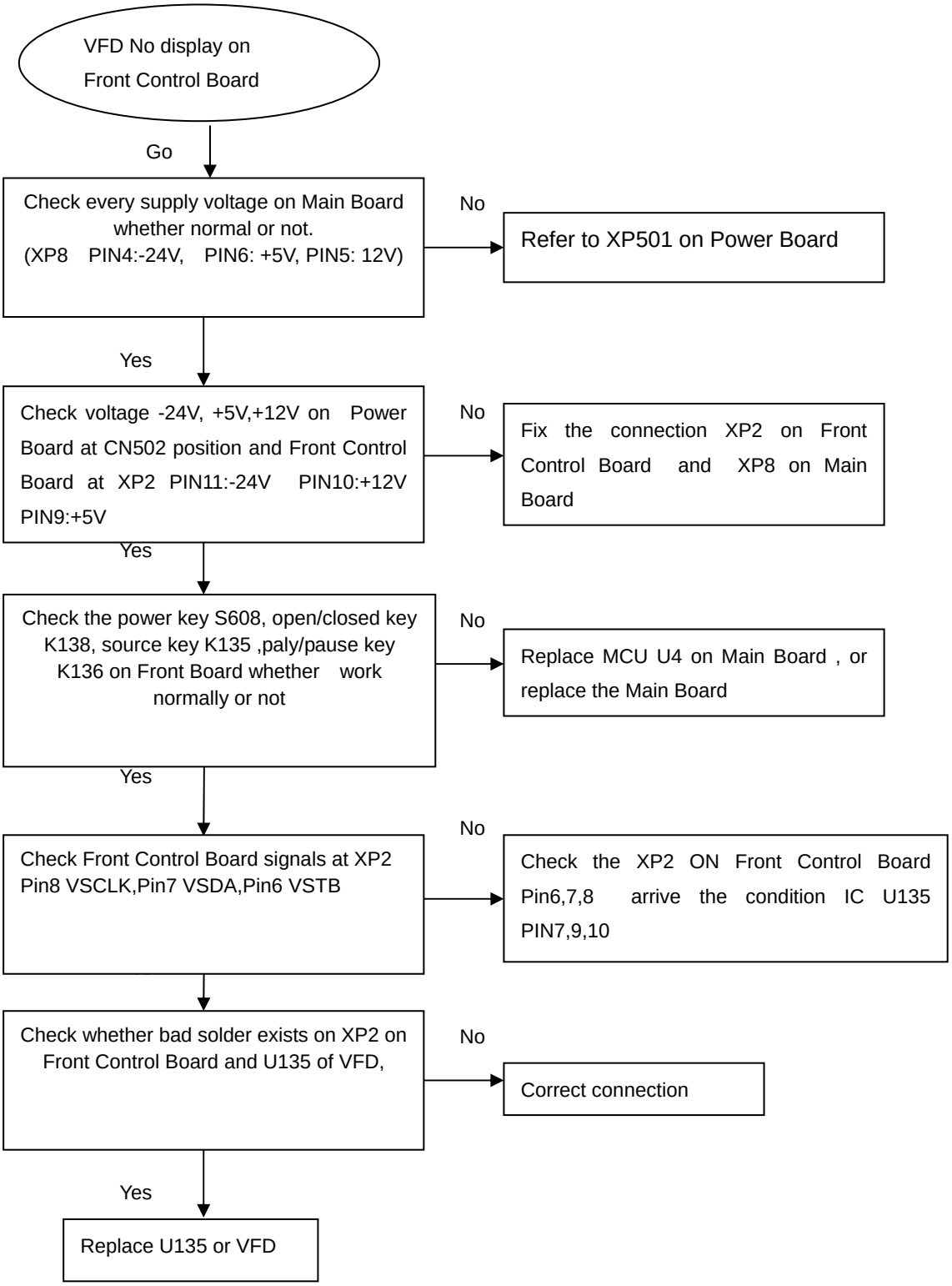
SETUP—>Advanced >Version Info.

While it shows the dialog box, we can see some information like below:

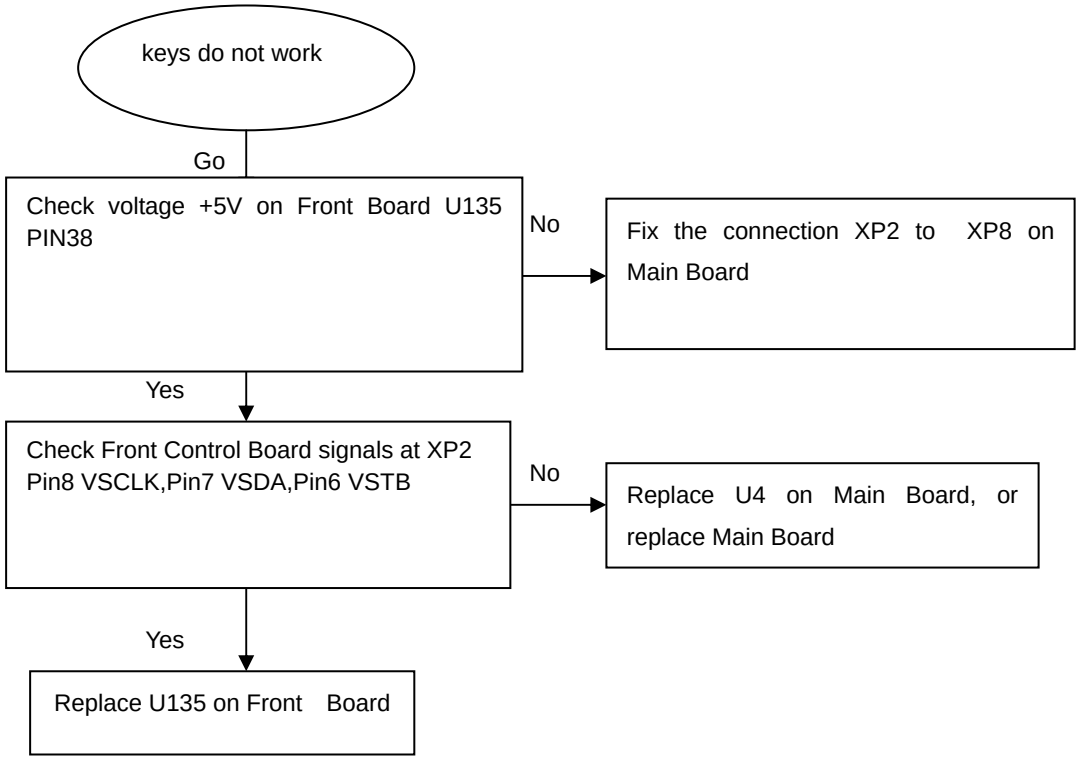
For example:
Model: HTSxxxx/xx
System SW:x.xx.xx
Subsystem SW:xx-xx-xx-xx
Ethernet MAC:xx:xx:xx:xx:xx;xx
EUI64:xxxxxxxxxxxxxxx

Caution: The set must not be power off during upgrading, Otherwise the Main board will be damaged entirely.

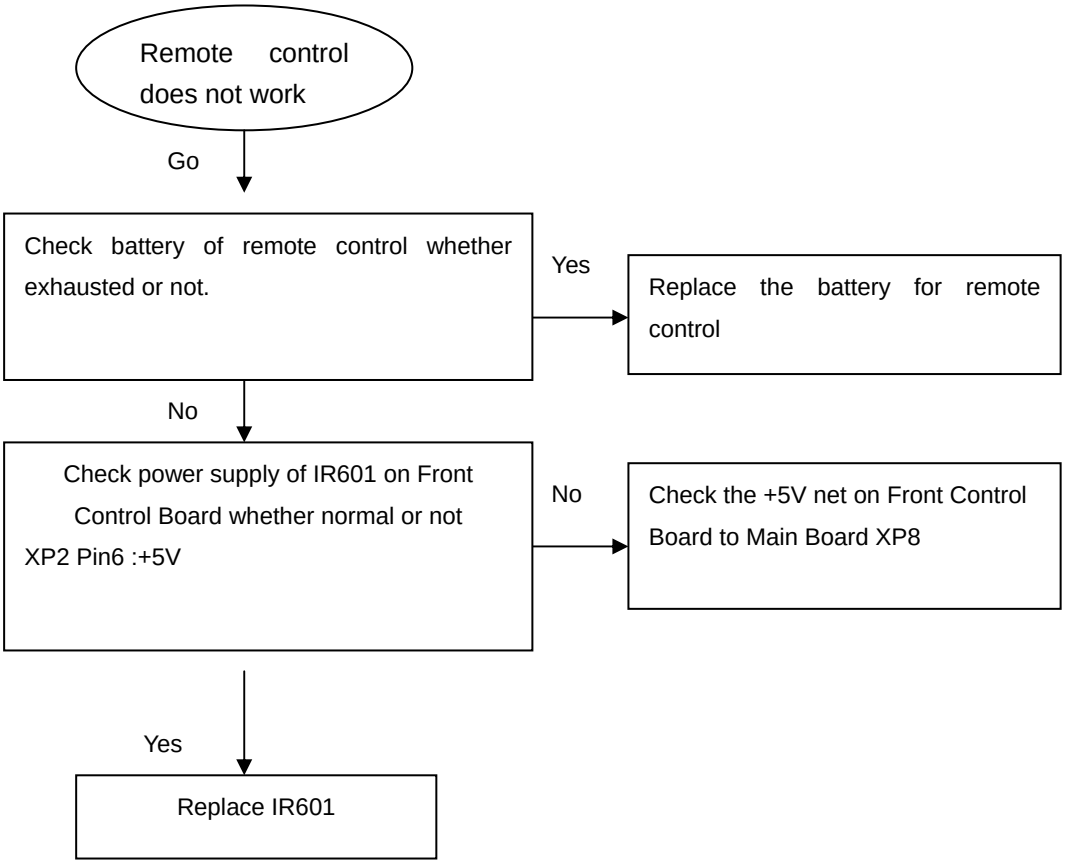
VFD No display on Front Control Board


VFD No display on
Front Control Board
Go
Check every supply voltage on Main Board whether normal or not.
(XP8 PIN4:-24V, PIN6: +5V, PIN5: 12V)
No
Refer to XP501 on Power Board
Yes
Check voltage -24V, +5V,+12V on Power Board at CN502 position and Front Control Board at XP2 PIN11:-24V PIN10:+12V PIN9:+5V
No
Fix the connection XP2 on Front Control Board and XP8 on Main Board
Yes
Check the power key S608, open/closed key K138, source key K135 ,paly/pause key K136 on Front Board whether work normally or not
No
Replace MCU U4 on Main Board , or replace the Main Board
Yes
Check Front Control Board signals at XP2 Pin8 VSCLK,Pin7 VSDA,Pin6 VSTB
No
Check the XP2 ON Front Control Board Pin6,7,8 arrive the condition IC U135 PIN7,9,10
Check whether bad solder exists on XP2 on Front Control Board and U135 of VFD,
No
Correct connection
Yes
Replace U135 or VFD

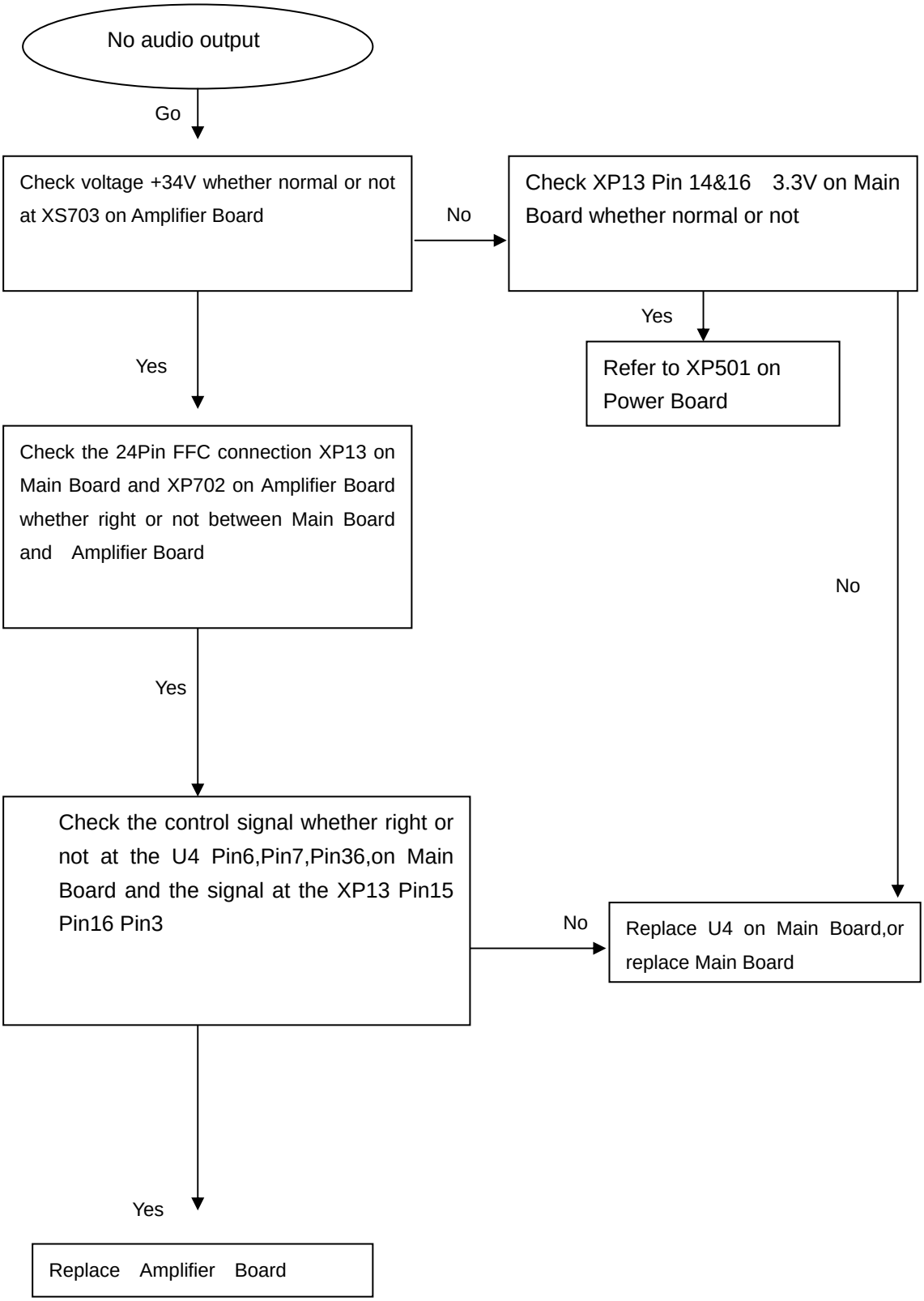
keys do not work


keys do not work
Go
Check voltage +5V on Front Board U135 PIN38
No
Fix the connection XP2 to XP8 on Main Board
Yes
Check Front Control Board signals at XP2 Pin8 VSCLK,Pin7 VSDA,Pin6 VSTB
No
Replace U4 on Main Board, or replace Main Board
Yes
Replace U135 on Front Board

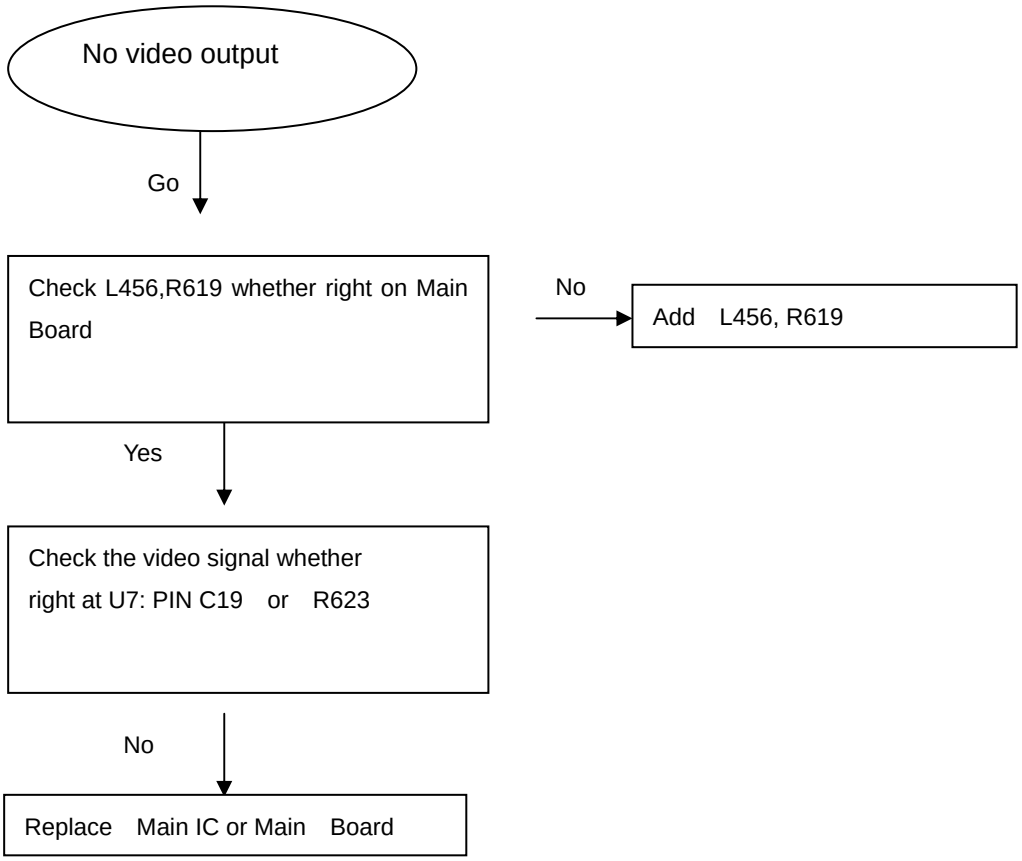
Remote control does not work


Remote control does not work
Go
Check battery of remote control whether exhausted or not.
Yes
Replace the battery for remote control
No
Check power supply of IR601 on Front Control Board whether normal or not
XP2 Pin6 :+5V
No
Check the +5V net on Front Control Board to Main Board XP8
Yes
Replace IR601

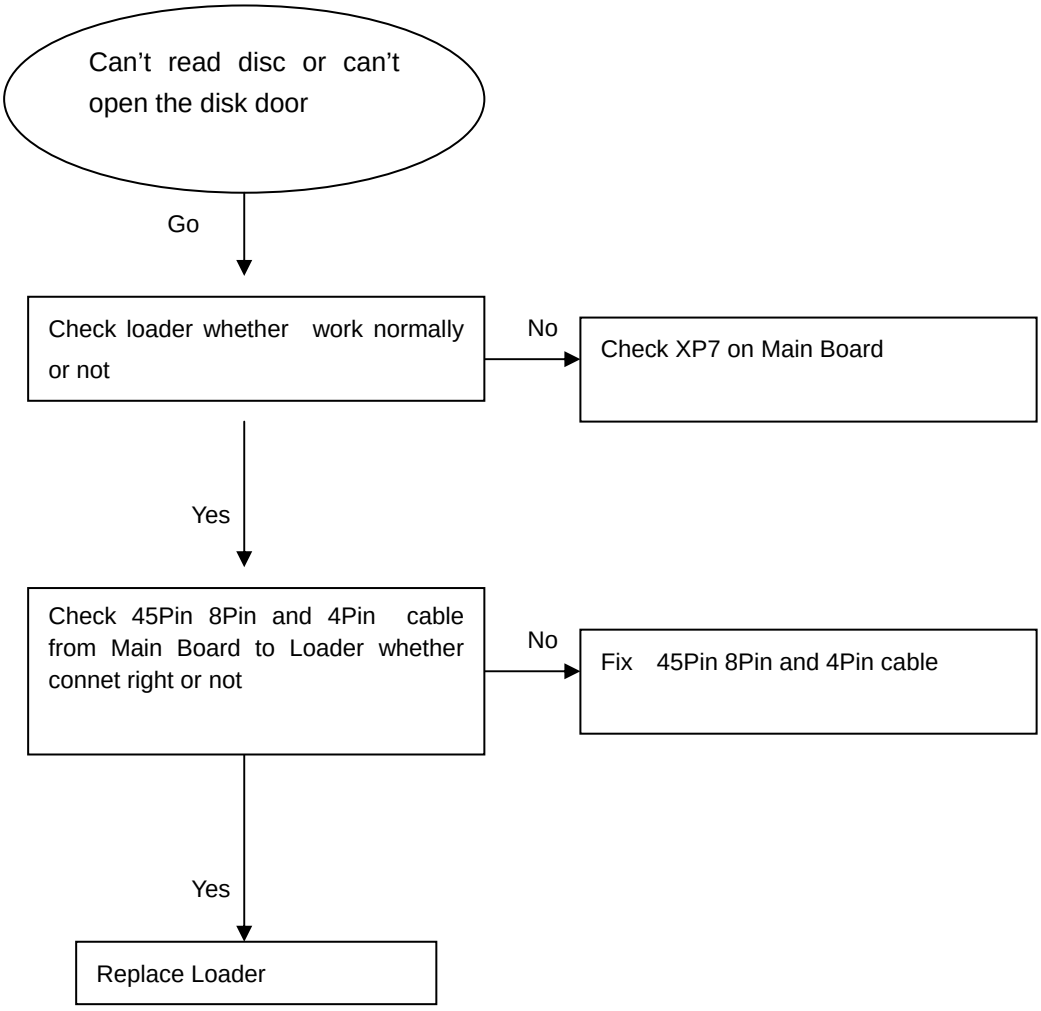
No audio output


No audio output
Go
Check voltage +34V whether normal or not at XS703 on Amplifier Board
No
Check XP13 Pin 14&16 3.3V on Main Board whether normal or not
Yes
Refer to XP501 on Power Board
Yes
Check the 24Pin FFC connection XP13 on Main Board and XP702 on Amplifier Board whether right or not between Main Board and Amplifier Board
No
Yes
Check the control signal whether right or not at the U4 Pin6,Pin7,Pin36,on Main Board and the signal at the XP13 Pin15 Pin16 Pin3
No
Replace U4 on Main Board,or replace Main Board
Yes
Replace Amplifier Board

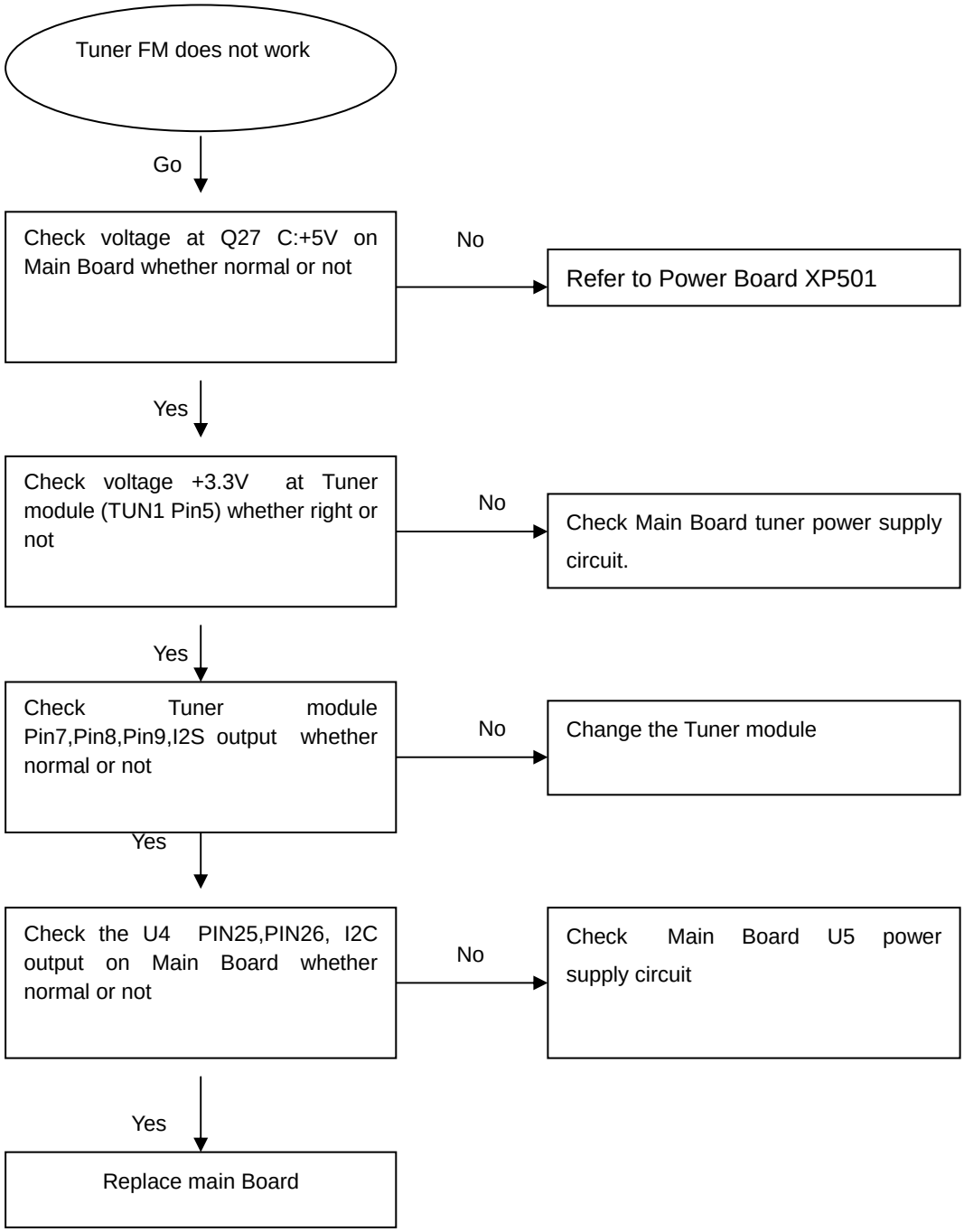
No video output



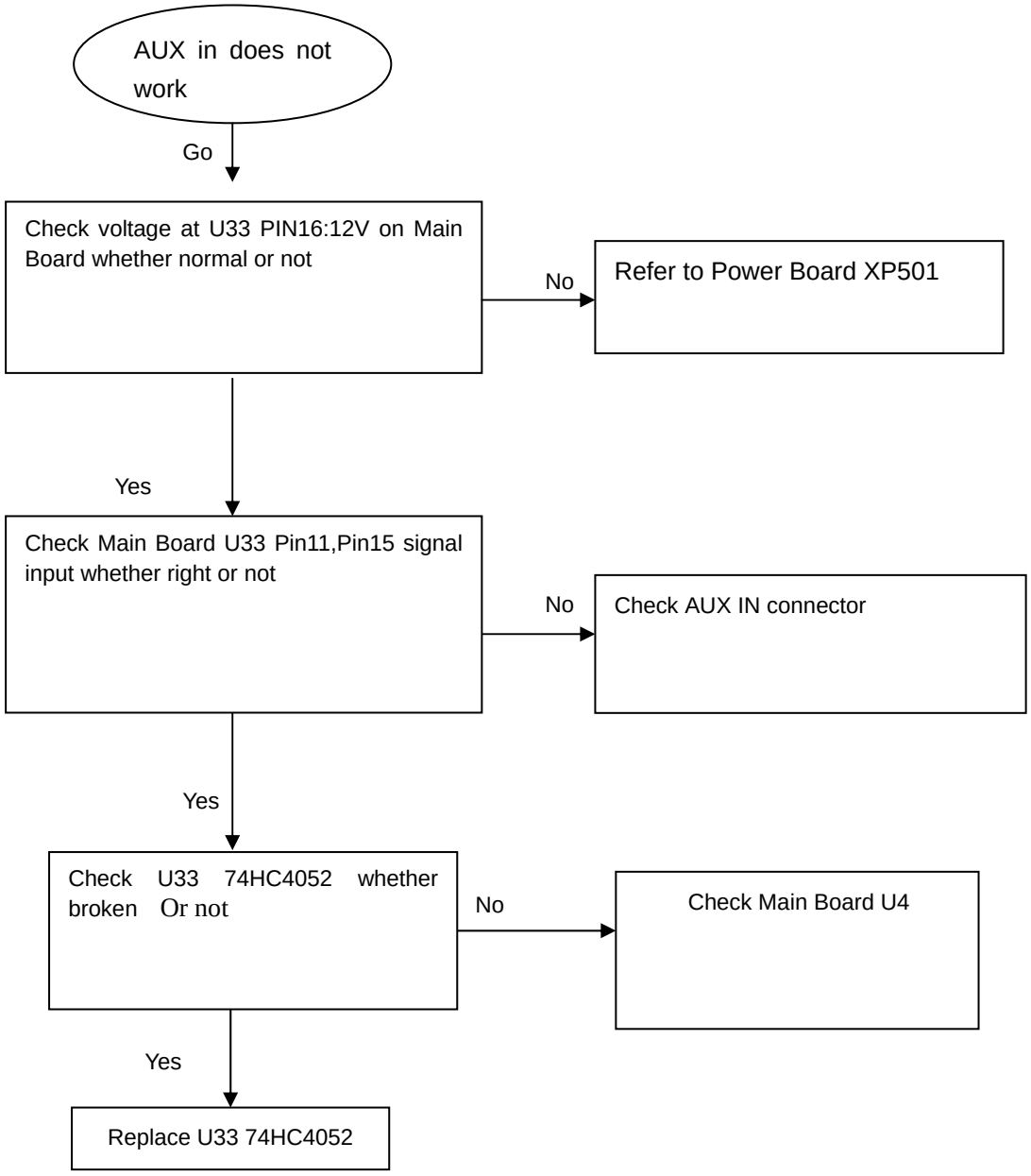
Can’t read disc or can’t open the disk door


Can’t read disc or can’t open the disk door
Go
Check loader whether work normally or not
No
Check XP7 on Main Board
Yes
Check 45Pin 8Pin and 4Pin cable from Main Board to Loader whether connet right or not
No
Fix 45Pin 8Pin and 4Pin cable
Yes
Replace Loader

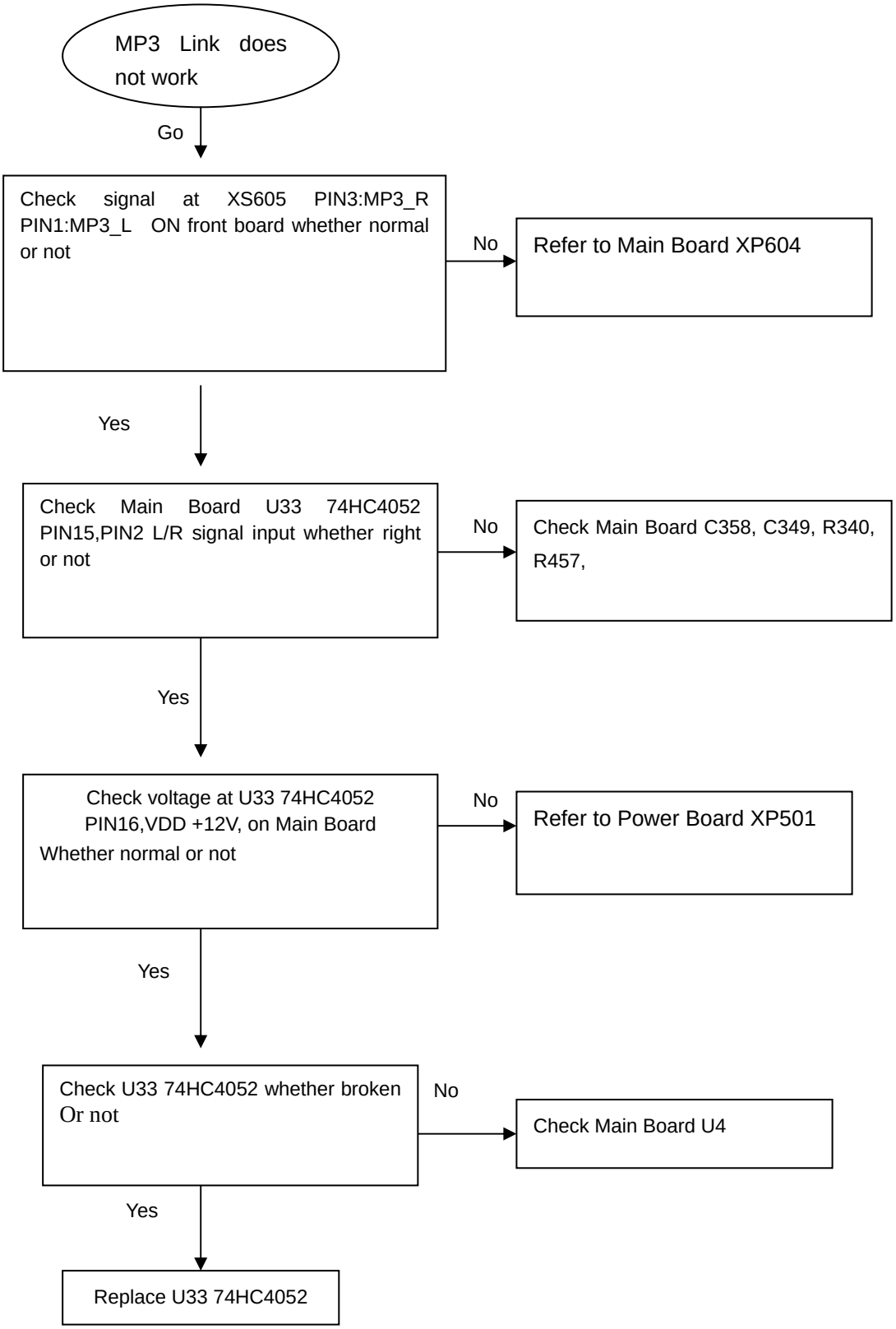
Tuner FM does not work


Tuner FM does not work
Go
Check voltage at Q27 C:+5V on Main Board whether normal or not
No
Refer to Power Board XP501
Yes
Check voltage +3.3V at Tuner module (TUN1 Pin5) whether right or not
No
Check Main Board tuner power supply circuit.
Yes
Check Tuner module Pin7,Pin8,Pin9,I2S output whether normal or not
No
Change the Tuner module
Yes
Check the U4 PIN25,PIN26, I2C output on Main Board whether normal or not
No
Check Main Board U5 power supply circuit
Yes
Replace main Board

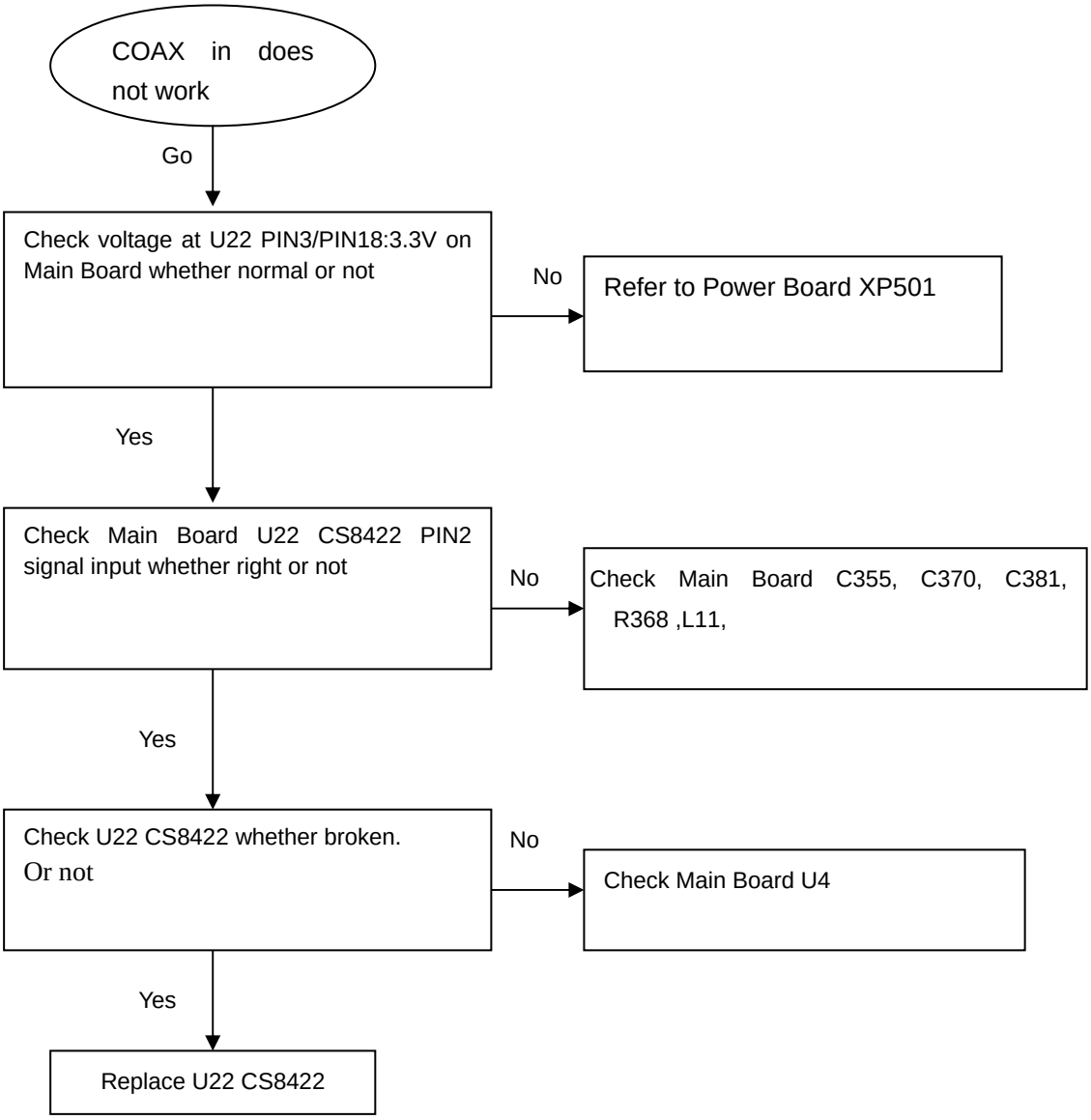
AUX in does not work



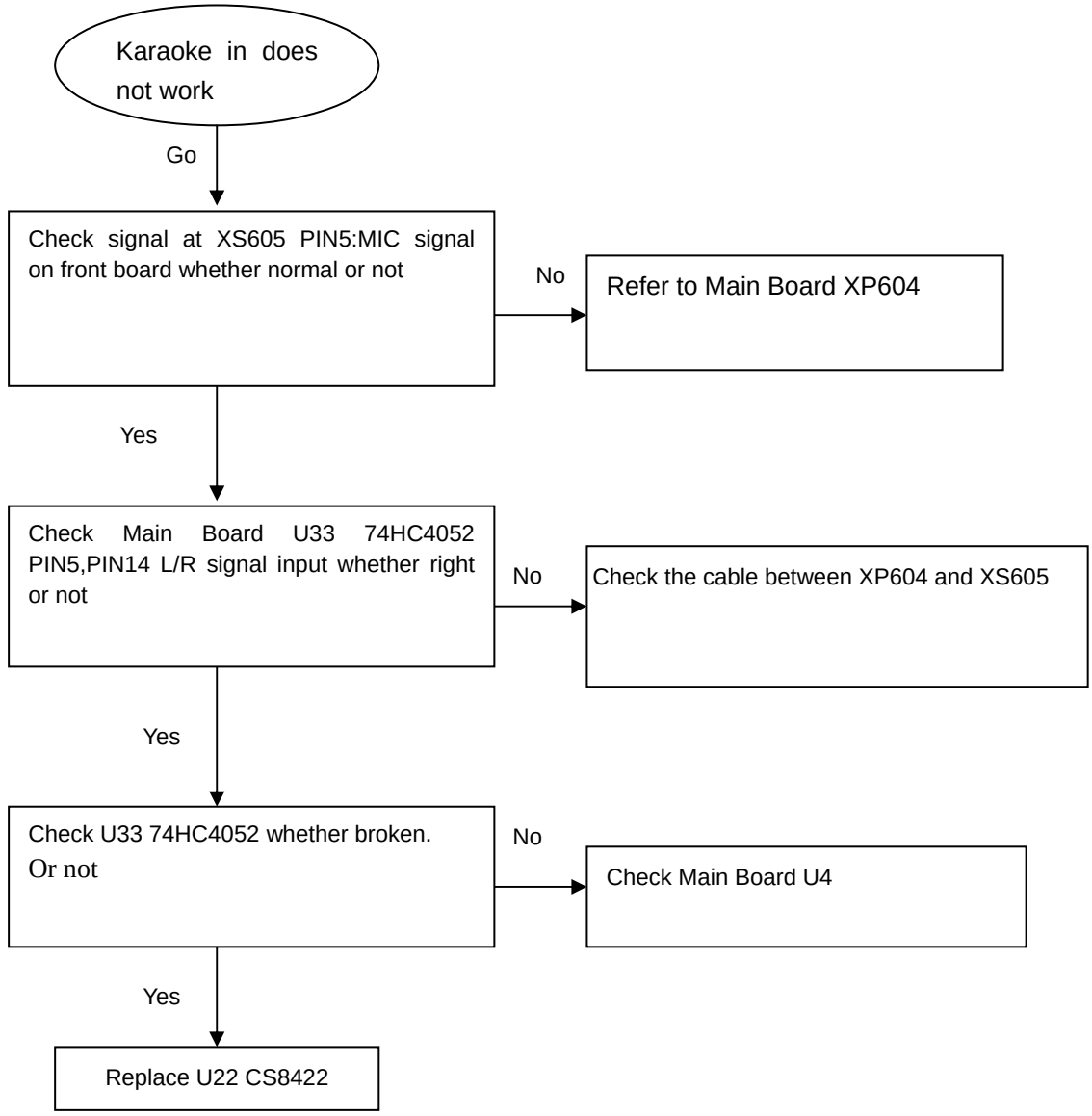
MP3 Link does not work


MP3 Link does not work
Go
Check signal at XS605 PIN3:MP3_R PIN1:MP3_L ON front board whether normal or not
No
Refer to Main Board XP604
Yes
Check Main Board U33 74HC4052 PIN15,PIN2 L/R signal input whether right or not
No
Check Main Board C358, C349, R340, R457,
Yes
Check voltage at U33 74HC4052 PIN16,VDD +12V, on Main Board Whether normal or not
No
Refer to Power Board XP501
Yes
Check U33 74HC4052 whether broken Or not
No
Check Main Board U4
Yes
Replace U33 74HC4052

COAX in does not work

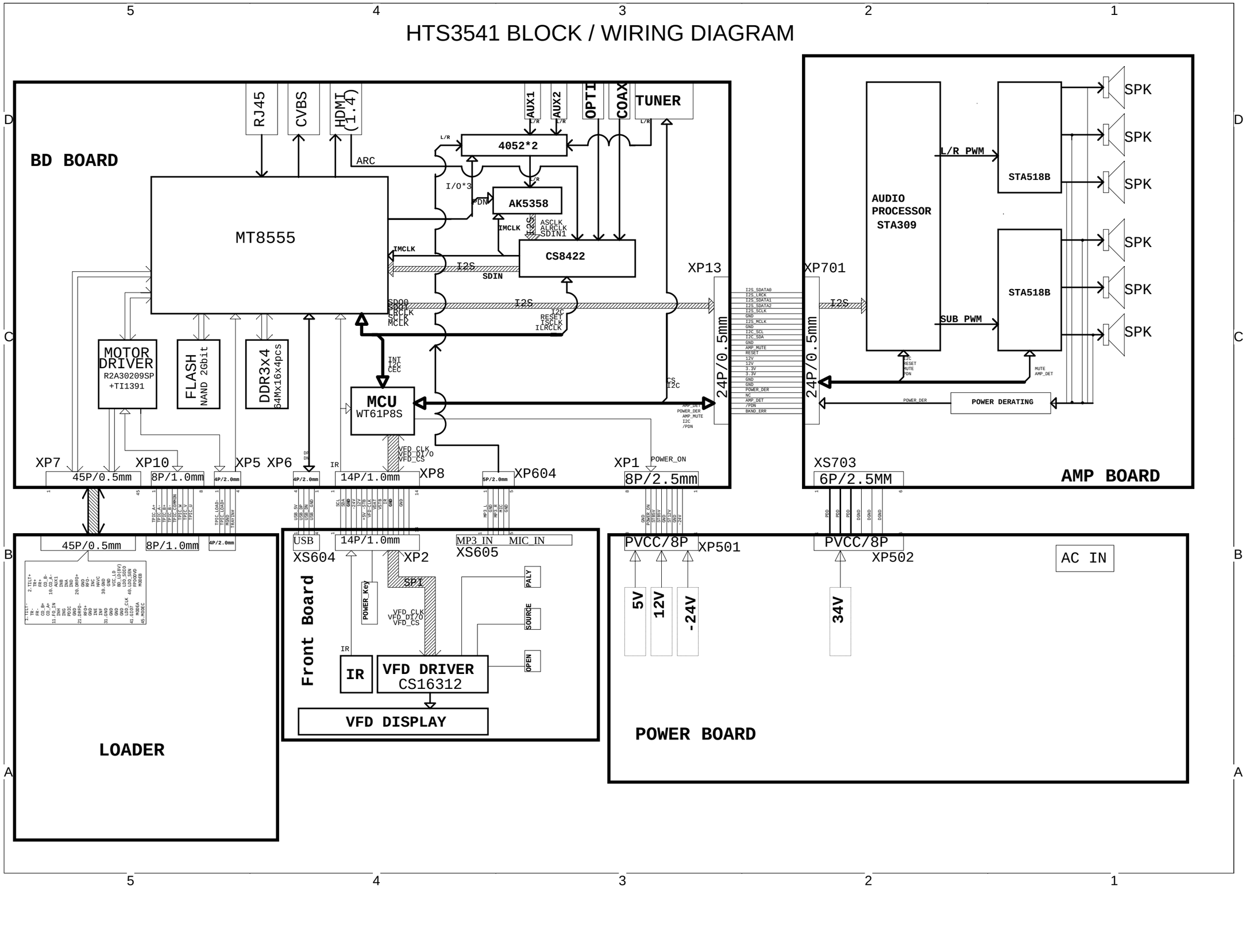

COAX in does not work
Go
Check voltage at U22 PIN3/PIN18:3.3V on Main Board whether normal or not
No
Refer to Power Board XP501
Yes
Check Main Board U22 CS8422 PIN2 signal input whether right or not
No
Check Main Board C355, C370, C381, R368 ,L11,
Yes
Check U22 CS8422 whether broken. Or not
No
Check Main Board U4
Yes
Replace U22 CS8422

Karaoke in does not work


Karaoke in does not work
Go
Check signal at XS605 PIN5:MIC signal on front board whether normal or not
No
Refer to Main Board XP604
Yes
Check Main Board U33 74HC4052 PIN5,PIN14 L/R signal input whether right or not
No
Check the cable between XP604 and XS605
Yes
Check U33 74HC4052 whether broken. Or not
No
Check Main Board U4
Yes
Replace U22 CS8422

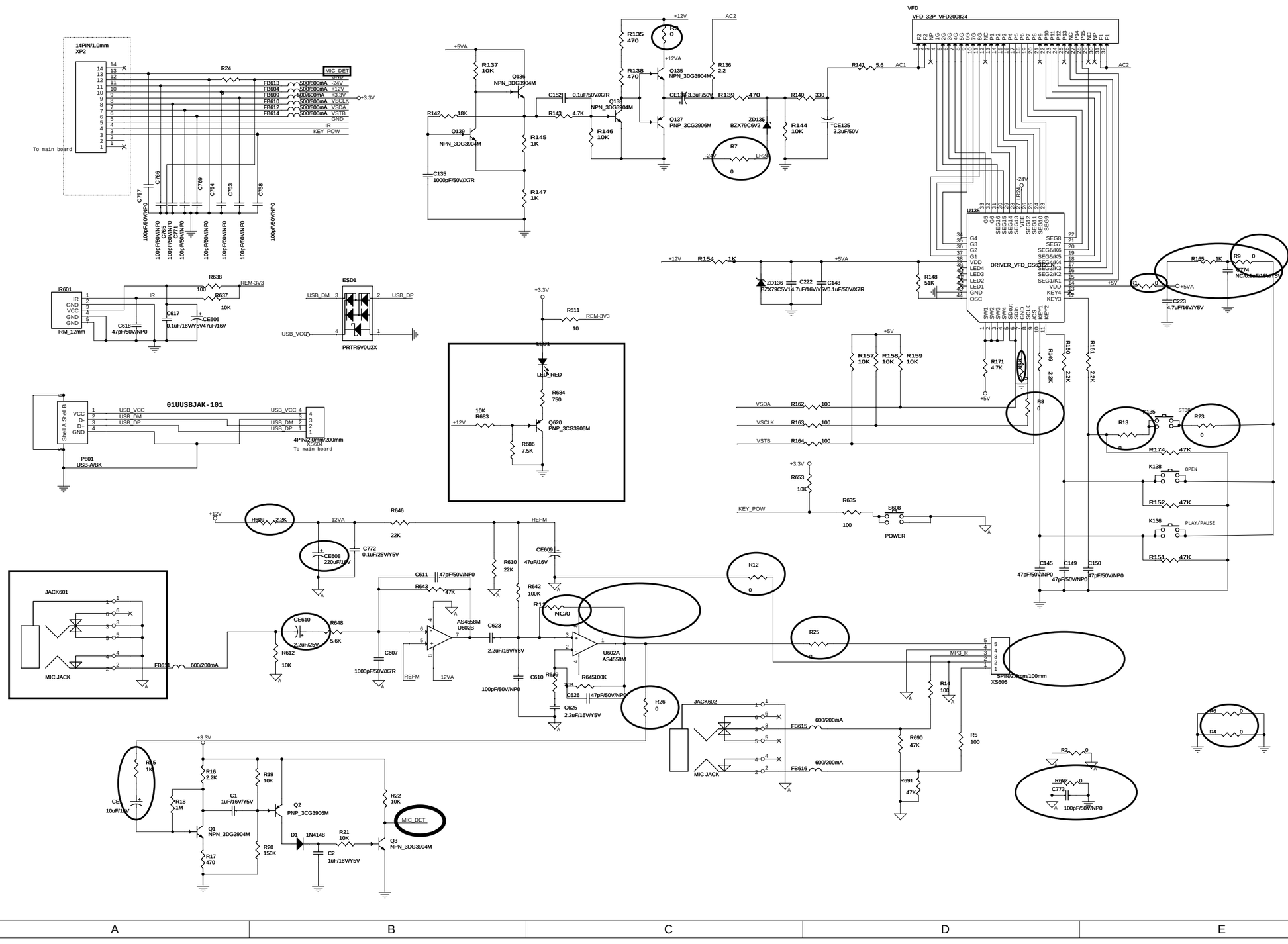
6-1

HTS3541 BLOCK / WIRING DIAGRAM



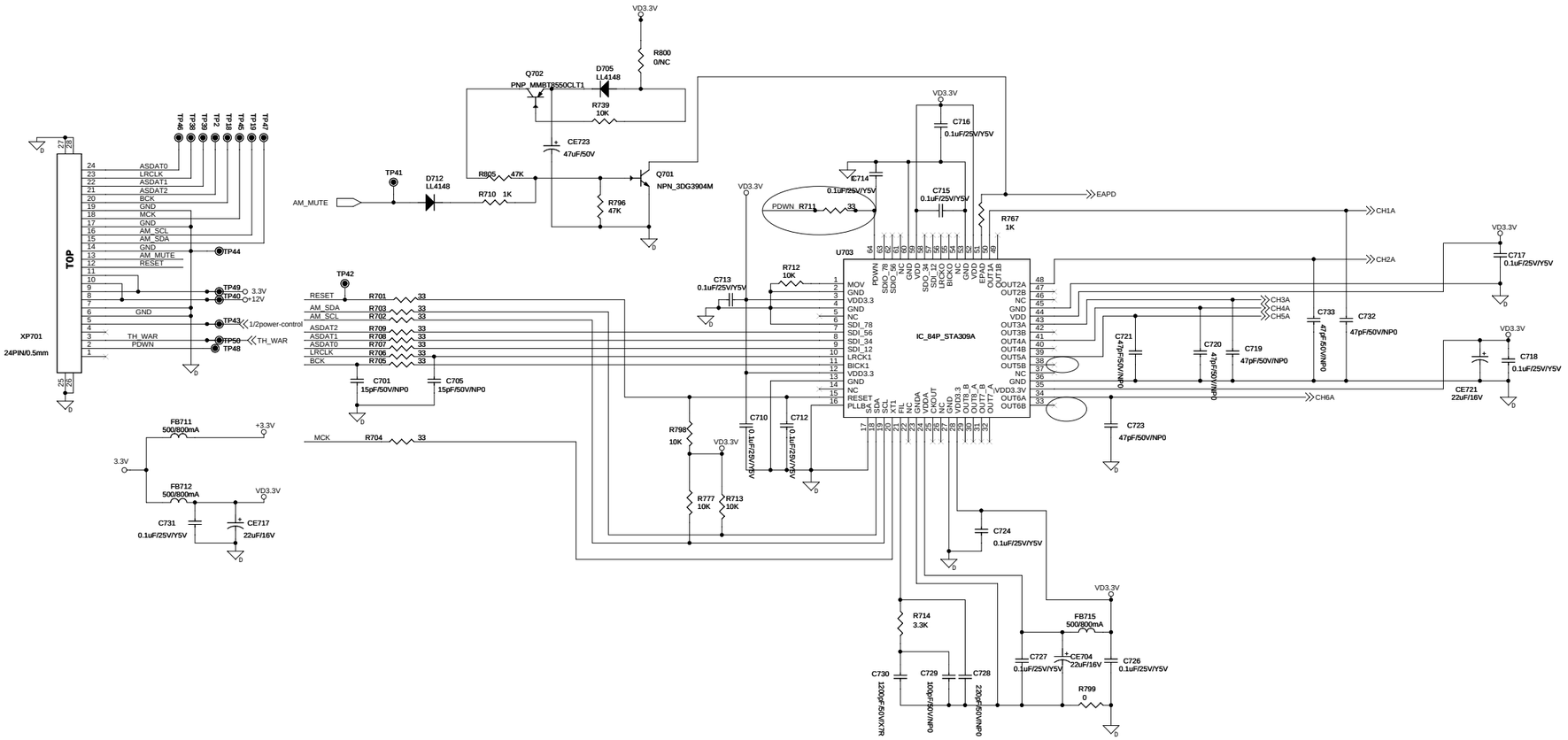
7-1

Front Control Board Circuit Diagram:



7-2

Amplifier Board Circuit Diagram: STA309A



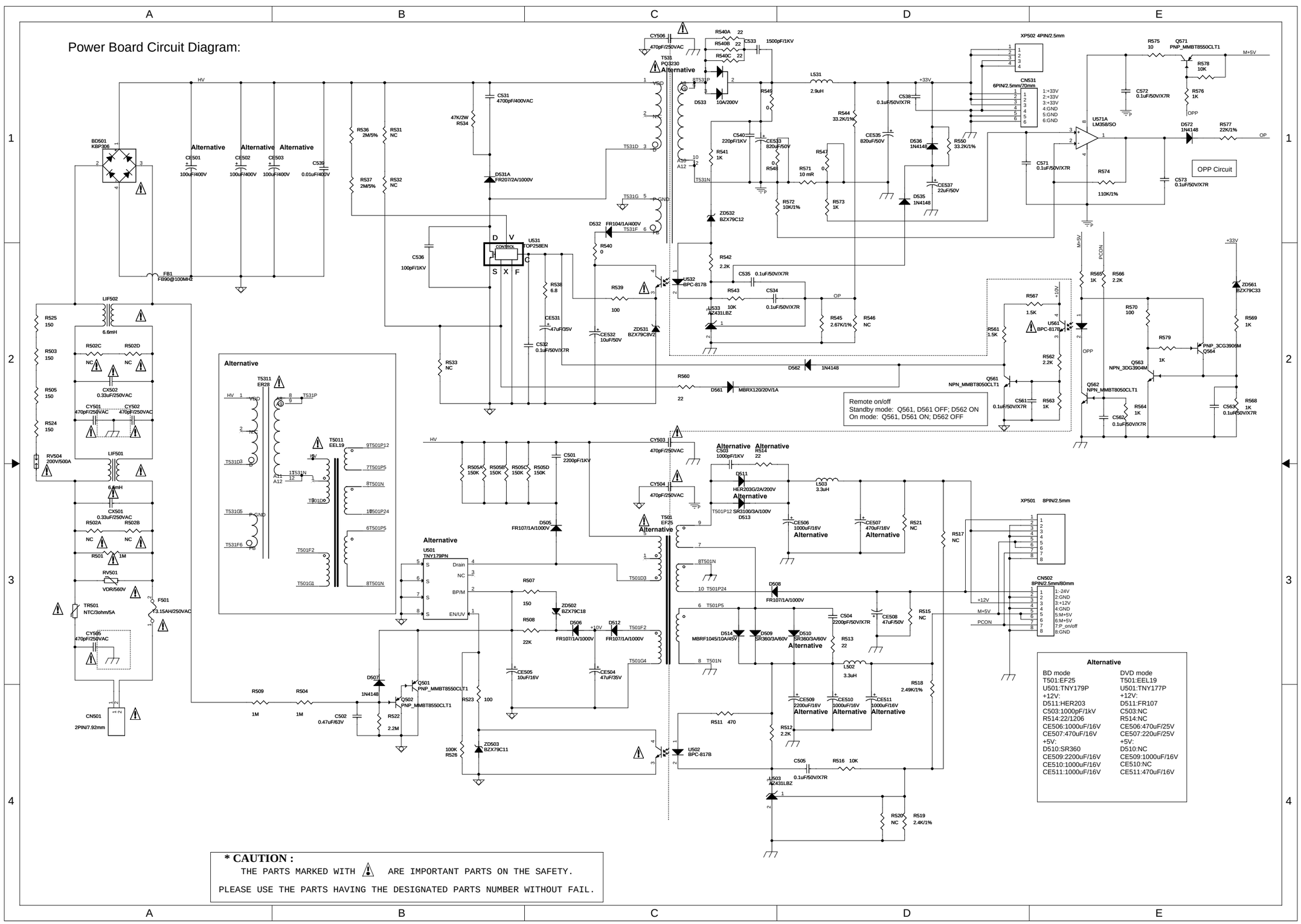
7-3

Amplifier Board Circuit Diagram: STA518

U701 IC_36P_STA518
U702 IC_36P_STA518
U705A AS4558M
U705B AS4558M
JK701 CON_12P_2GNDS
XS703 6PIN/2.5mm

7-4

Power Board Circuit Diagram:



*** CAUTION :**

THE PARTS MARKED WITH ⚠ ARE IMPORTANT PARTS ON THE SAFETY.

PLEASE USE THE PARTS HAVING THE DESIGNATED PARTS NUMBER WITHOUT FAIL.

7-5

Main Board Circuit Diagram: Power Source

XP1
8PIN/2.5mm
GND3 +12V CC2 +5V1 VCC
VCC_D +12V +24V
R602 1K
C393 0.022uF/50V/Y5V
C321 0.022uF/50V/Y5V
C318 0.022uF/50V/Y5V
C298 0.022uF/50V/Y5V

+12V
R296 20K
1.1V
R294 1K
R293 10K
C301 1uF/10V/Y5V
R295 100K
C313 0.1uF/25V/Y5V
Q208 NPN_3DG3904M
Q209 A03407
R963 NC/0
C316 0.1uF/25V/Y5V
+12V_D
R297 NC/470
2,7 POWER_K

R292 100K
C323 0.1uF/25V/Y5V
VCC
Q207 ASM3403
R962 NC/0
C299 0.1uF/25V/Y5V
VCC_D

+12V_D
D1 NC
ZD1 BZX79C27
R320 4.7K
Q150 NPN_3DG3904M
-24V
-24V_D

VCC
PCON R280 1K R200 NC/6.8K
OPWRSB OPWRSBR3 NC/100
C3 0.1uF/25V/Y5V
R1 10
C324 0.1uF/25V/Y5V
R5 10K
U1 AT1529
VCC VIN LX FB REF PGND EN TP
C4 0.1uF/25V/Y5V Close to DC-DC
C5 10uF/10V/Y5V
C6 NC/100uF/10V/Y5V
L1 2.2uH/3A
DC Current: 4.1A
Saturation Current: 6.4A
DC resistor: 15mOHM
1.1V_FB
C325 0.1uF/25V/Y5V
behind of Caps
C8 22uF/10V/Y5V
R6 1.2K/1%
R2 5.6K/1%
R4 15K/1%
C326 0.1uF/25V/Y5V
Adj 1.15V: 0.8*(6.65+15)/15=1.155V
Adj 1.2V: 0.8*(7.87+15)/15=1.22V
1.1V POWER
C327 22uF/10V/Y5V
(pin to pin with G5627)

(pin to pin with G5627)
VCC
C14 0.1uF/25V/Y5V
R8 10
VCC_D R17 NC/100K
C23 0.1uF/25V/Y5V
R13 20K
U3 AT1529
VCC VIN LX FB REF PGND EN GND TP
C10 0.1uF/25V/Y5V
C15 10uF/10V/Y5V
L2 2.2uH/3A
C22 0.1uF/25V/Y5V
behind of Caps
C20 22uF/10V/Y5V
R9 560
R12 13K/1%
R14 15K/1%
C21 0.1uF/25V/Y5V
1.5V 1.2A
C17 NC/22uF/10V/Y5V
C18 0.1uF/25V/Y5V

Internal MCU Use U2
External MCU Use R7

3.3V
R7 0
3.3V_STBY
100MA(Max)
R601 NC/0
3.3V_STBY_MCU
VCC
U2 G9091-330T11U SOT-25/SMD
VIN VOUT GND EN NC
close to DC/DC
C11 2.2uF/10V/Y5V
close to LDO
C12 4.7uF/16V/Y5V

VCC
Q213 NC/PNP_3CG9012M
R327 NC/10K EN
R324 NC/4.7K
2,7 POWER_K
R325 NC/4.7K
Q212 NC/NPN_3DG3904M

VCC
R16 10K
C29 10uF/10V/Y5V
C19 0.1uF/25V/Y5V
3.3VRESET#
U5 G966A-25ADJF11U
VPP VIN VEN POK NC VO ADJ GND
VCC_D R39 NC/10K EN1
C30 0.1uF/25V/Y5V
R41 10K
R21 15K/1%
R26 4.7K/1%
3.3V
CE4 100uF/16V
C28 0.1uF/25V/Y5V
FB19 10/2A D3.3V
FB10 10/2A A3.3V

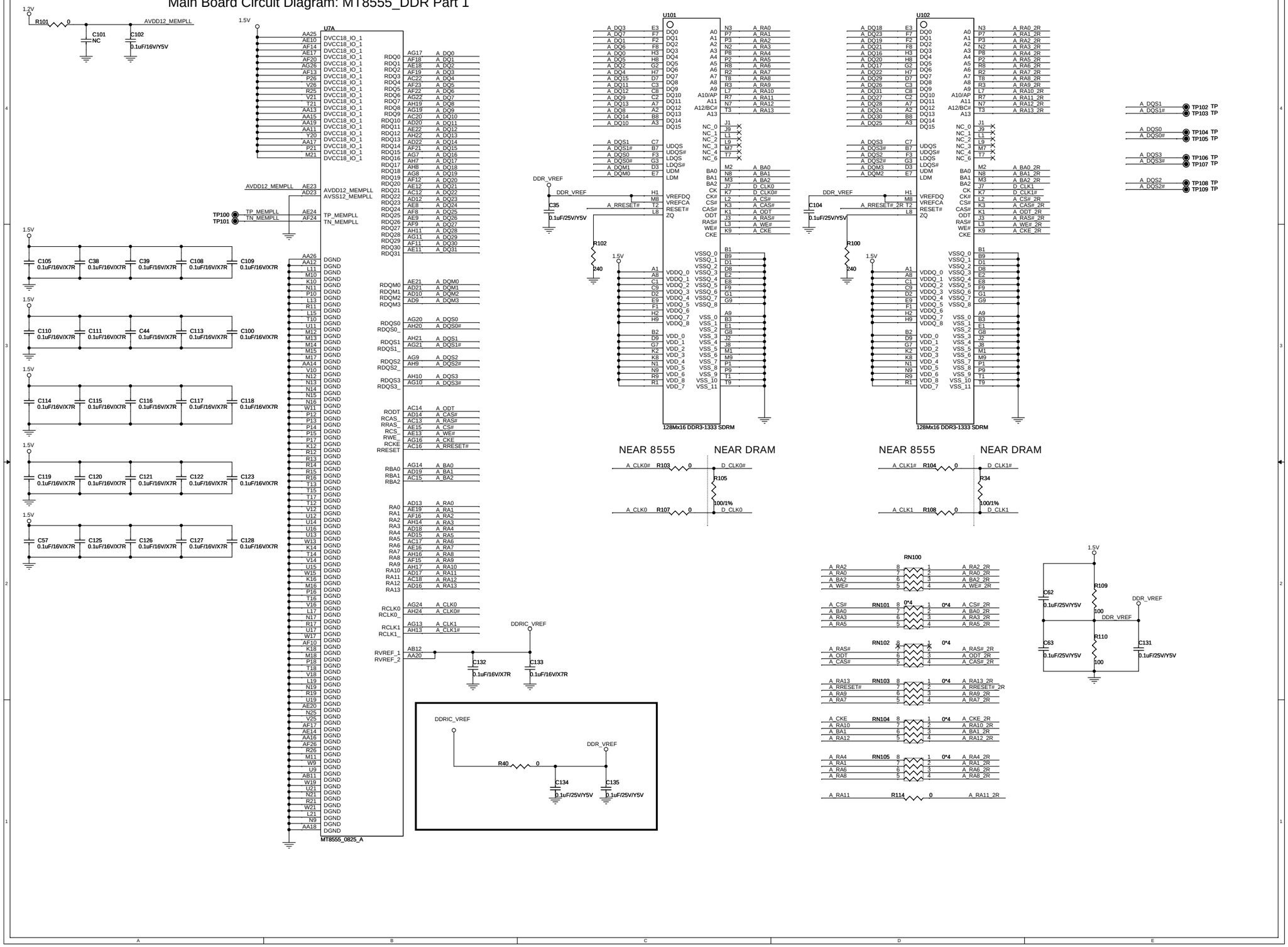
VCC_D
3.3V_STBY
RESET CIRCUIT
Q4 2N3904
R300 15K
R303 3.3K
R304 NC/33K
R305 20K
R301 100
R302 2.7K
Q5 NPN_3DG3904M
Q6 NPN_3DG3904M
R15 NC/100K
C25 10uF/10V/Y5V
C26 0.1uF/25V/Y5V
TP1
RESET#
RESET_ 7,8
close to IC
VCC R/R to Q3.b
5.000V 0.772V
4.632V 0.700V
3.885V 0.600V
3.237V 0.500V

VCC_D
R326 NC/0
D19 LL4148
R18 3.3K
R19 10K
R20 15K/1%
R23 100
R25 2.7K
FE_RES
Q1 NPN_3DG3904M
Q2 NPN_3DG3904M
C31 0.1uF/25V/Y5V
EN
R306 2.2K EN1
AC power off
RSTI
VCORE 1.1V

1.1V
R27 0
1.2V
A1.2V
C32 0.1uF/25V/Y5V

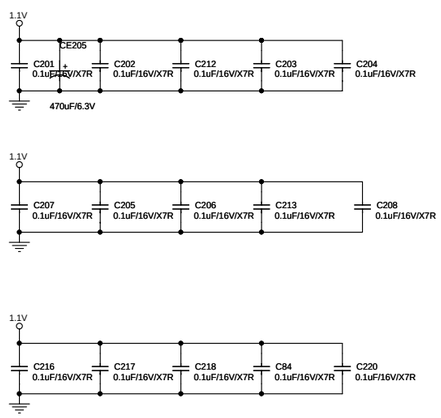
7-6

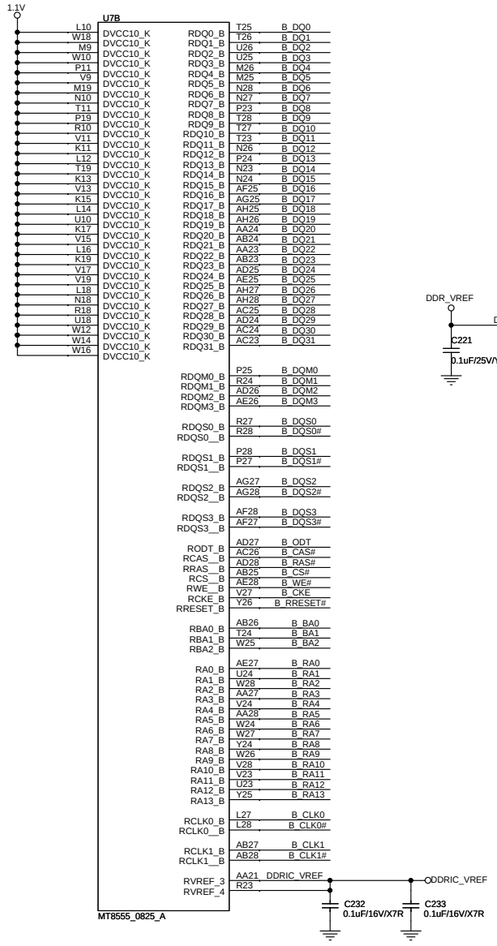
Main Board Circuit Diagram: MT8555_DDR Part 1

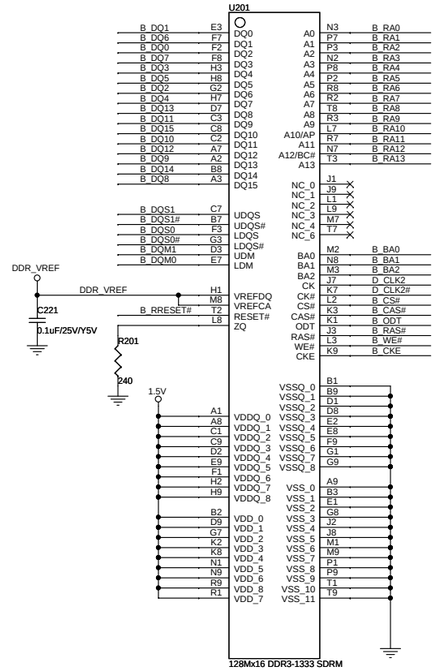


7-7

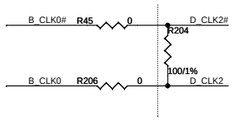
Main Board Circuit Diagram: MT8555_DDR Part 2

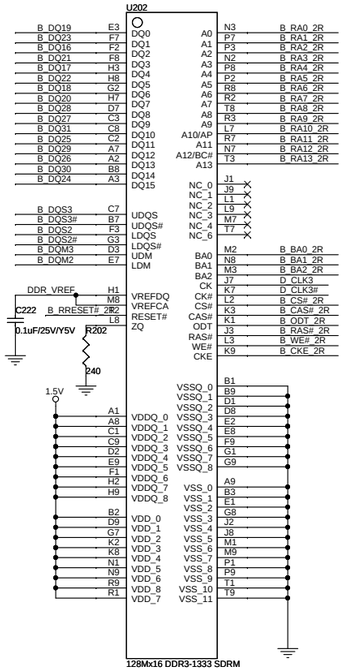




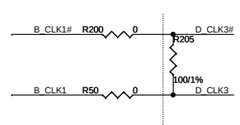


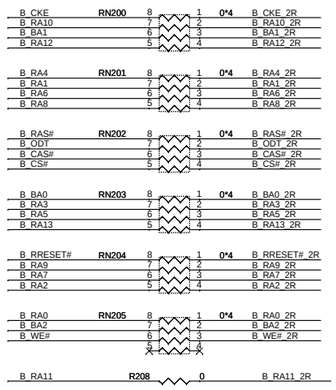
NEAR 8555 NEAR DRAM

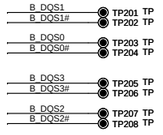


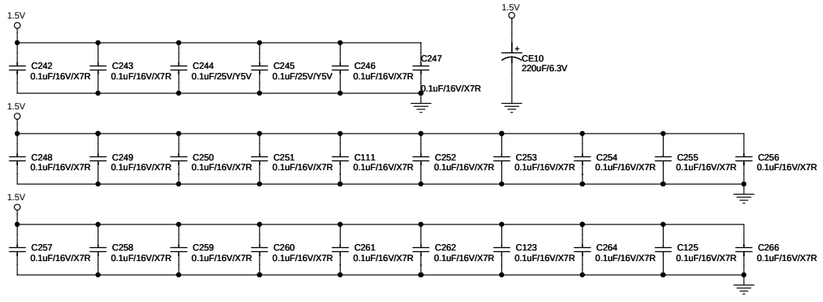


NEAR 8555 NEAR DRAM




B_CKE RN200 8 1 0*4 B_CKE_2R
B_RA10 7 2 B_RA10_2R
B_BA1 6 3 B_BA1_2R
B_RA12 5 4 B_RA12_2R
B_RA4 RN201 8 1 0*4 B_RA4_2R
B_RA1 7 2 B_RA1_2R
B_RA6 6 3 B_RA6_2R
B_RA8 5 4 B_RA8_2R
B_RAS# RN202 8 1 0*4 B_RAS#_2R
B_ODT 7 2 B_ODT_2R
B_CAS# 6 3 B_CAS#_2R
B_CS# 5 4 B_CS#_2R
B_BA0 RN203 8 1 0*4 B_BA0_2R
B_RA3 7 2 B_RA3_2R
B_RA5 6 3 B_RA5_2R
B_RA13 5 4 B_RA13_2R
B_RRESET# RN204 8 1 0*4 B_RRESET#_2R
B_RA9 7 2 B_RA9_2R
B_RA7 6 3 B_RA7_2R
B_RA2 5 4 B_RA2_2R
B_RA0 RN205 8 1 0*4 B_RA0_2R
B_BA2 7 2 B_BA2_2R
B_WE# 6 3 B_WE#_2R
5 4
B_RA11 R208 0 B_RA11_2R





7-8

Main Board Circuit Diagram: MT8555_HDMI_OUTPUT

3.3V Analog Power

3.3V
R52 0
AVDD33_VDAC_R
C127 0.1uF/16V/X7R
AVDD33_VDAC_X
C129 0.1uF/16V/X7R
AVDD33_VDAC_BG
C133 0.1uF/16V/X7R

3.3V_STBY
AVDD33_XTAL
C138 NC
C139 0.1uF/16V/X7R

PLL

1.2V
AVDD12_DMPLL
C141 0.1uF/16V/X7R

1.2V
AVDD12_APLL
C142 0.1uF/16V/X7R

1.2V
AVDD12_27MPLL
C143 0.1uF/16V/X7R

For PLL testing

U7C

AVDD33_VDAC_R F18 AVDD33_VDAC_R
G17 AVSS33_VDAC_R
AVDD33_VDAC_X E19 AVDD33_VDAC_X
F19 AVSS33_VDAC_X
AVDD33_VDAC_BG D19 AVDD33_VDAC_BG
E18 AVSS33_VDAC_BG
AVDD33_XTAL C15 AVDD33_XTAL
D15 AVSS33_XTAL
AVDD12_DMPLL F15 AVDD12_DMPLL
F14 AVSS12_DMPLL
AVDD12_APLL G15 AVDD12_APLL
G14 AVSS12_APLL
AVDD12_27MPLL E15 AVDD12_27MPLL
E14 AVSS12_27MPLL

TP TP301 TXP C14 TP_PLLG
TP TP302 TXN D14 TN_PLLG

C132 27pF/50V/NP0
Y1 27MHz/30PPM
R59 1M
C137 27pF/50V/NP0
NS_XTALI A13 NS_XTALI
R60 10 NS_XTALO B13 NS_XTALO

AOMCLK C12 OMCLK R505 47 AOMCLK 13
AOBCK A12 OBCK R506 47 AOBCK 13
AOLRCK B12 OLRCK R507 47 AOLRCK 13
AOSDATA0 C11 OSDATA0 R508 47 AOSDATA0 13
AOSDATA1 D11 OSDATA1 R509 47 AOSDATA1 13
AOSDATA2 D12 OSDATA2 R510 47 AOSDATA2 13
AOSDATA3 E10
AOSDATA4 F10

SPDIF E13 MIC_DATA MIC_DATA
MCIN E12 R617 4.7K AMP_MUTE AMP_MUTE 13,8
AMUTE D10 AMUTE

VDACX_OUT C19 CVBSO CVBSO 12
VDACR_OUT C18 VDACR_OUT TP209
VDACG_OUT A19 VDACG_OUT TP210
VDACB_OUT B19 VDACB_OUT TP211
FS D18 FS R55 560/1%

AVDD12_HDMI_TX E16 AVDD12_HDMI_TX R56 0 1.2V
AVDD12_HDMI_TX D16
AVDD12_HDMI_TX G16 C130 0.1uF/16V/X7R
AVSS12_HDMI_TX F16 C131 NC
AVSS12_HDMI_TX

AVDD33_HDMI_TX C17 AVDD33_HDMI_TX R58 0 3.3V
AVDD33_HDMI_TX D17
AVDD33_HDMI_TX E17
AVSS33_HDMI_TX F17 C134 0.1uF/16V/X7R C135 NC

CH0_M A16 TX0-
CH0_P B16 TX0+
CH1_M A15 TX1-
CH1_P B15 TX1+
CH2_M A14 TX2-
CH2_P B14 TX2+
CLK_M A17 TXC-
CLK_P B17 TXC+
HTPLG D25 HDPLG C140 NC R62 NC/47K
CEC C24 CEC_M
HDMISD D24 HDMISD
HDMISCK C25 HDMISCK
EXT_CAP A18 EXT_CAP R64 TP23
EXT_RES B18 EXT_RES 2.49K/1%

SPBCK G11 R606 33 SPBCK SPBCK 12
SPDATA F13 R603 33 SPDATA SPDATA 12
SPLRCK F12 R604 33 SPLRCK SPLRCK 12
SPMCLK F11 R605 33 SPMCLK SPMCLK 12

C303 10pF/50V/NP0
C347 10pF/50V/NP0

MT8555_0825_A

AOMCLK
AOBCK
C305 10pF/50V/NP0
C306 10pF/50V/NP0

CEC CEC 8 R323 0 HDMI-CECT
CEC_M R63 33
C337 10pF/50V/NP0

HDMI Port

HDMI TX
Differential Signal !
No Through Hole !
100 ohm - Impedance

R311 4.7
TX2+ 1.4
TX2- 2
NC/ACM2012H-900-2P
R322 4.7
R329 4.7
TX1+ 1.5
TX1- 2
NC/ACM2012H-900-2P
R332 4.7
ESD2
TVS Arrays
GND
PESD_TPD4S010B

R346 4.7
TX0+ 1.6
TX0- 2
NC/ACM2012H-900-2P
R348 4.7
R349 4.7
TXC+ 1.7
TXC- 2
NC/ACM2012H-900-2P
R370 4.7
ESD1
TVS Arrays
GND
PESD_TPD4S010B

F_TX2+ F_TX2-
F_TX1+ F_TX1-
F_TX0+ F_TX0-
F_TXC+ F_TXC-
HDMI-CECT
ARC_IN
HDMI_SCL
HDMI_SDA
USB_VCC3
350mA
FB29 10/2A HDMI_VCC
HDPLG R70 33
ARC_IN_N
C312 10uF/10V/Y5V
ESD6 LVSL10180Z020/18V/2pF
ESD5 LVSL10180Z020/18V/2pF
J1 HDMI JACK

Reserved hardware trap

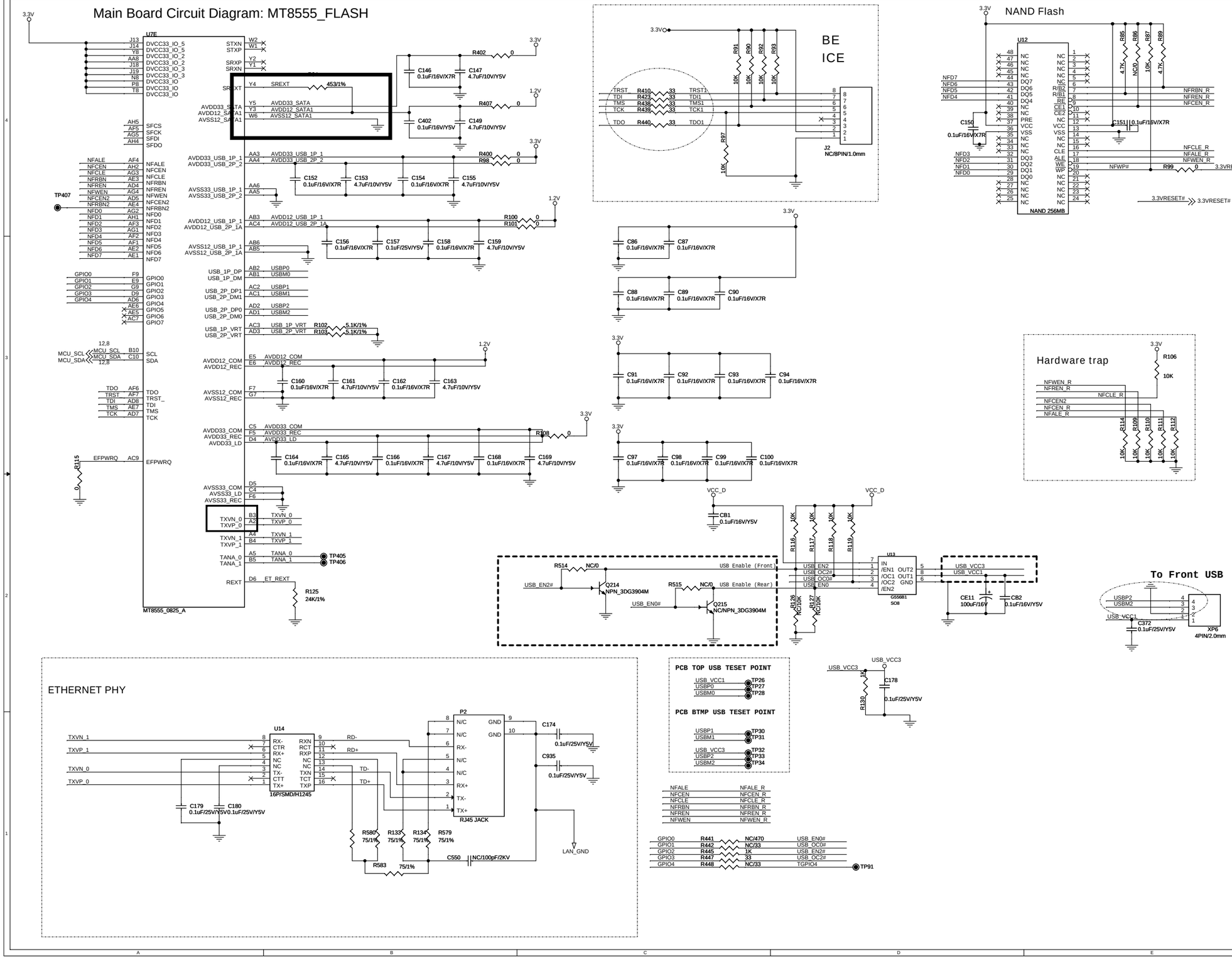
AOSDATA0
AOSDATA1
AOSDATA2
AOLRCK
R78 10K
R79 10K
R80 10K
R81 10K

HDMI DDC

VCC_D
R312 1.8K
D302 LVSL10180Z020/18V/2pF
HDMISCK R67 33 HDMI_SCL
HDMISD R66 33 HDMI_SDA
R313 1.8K
D304 LVSL10180Z020/18V/2pF
VCC_D

7-9

Main Board Circuit Diagram: MT8555_FLASH



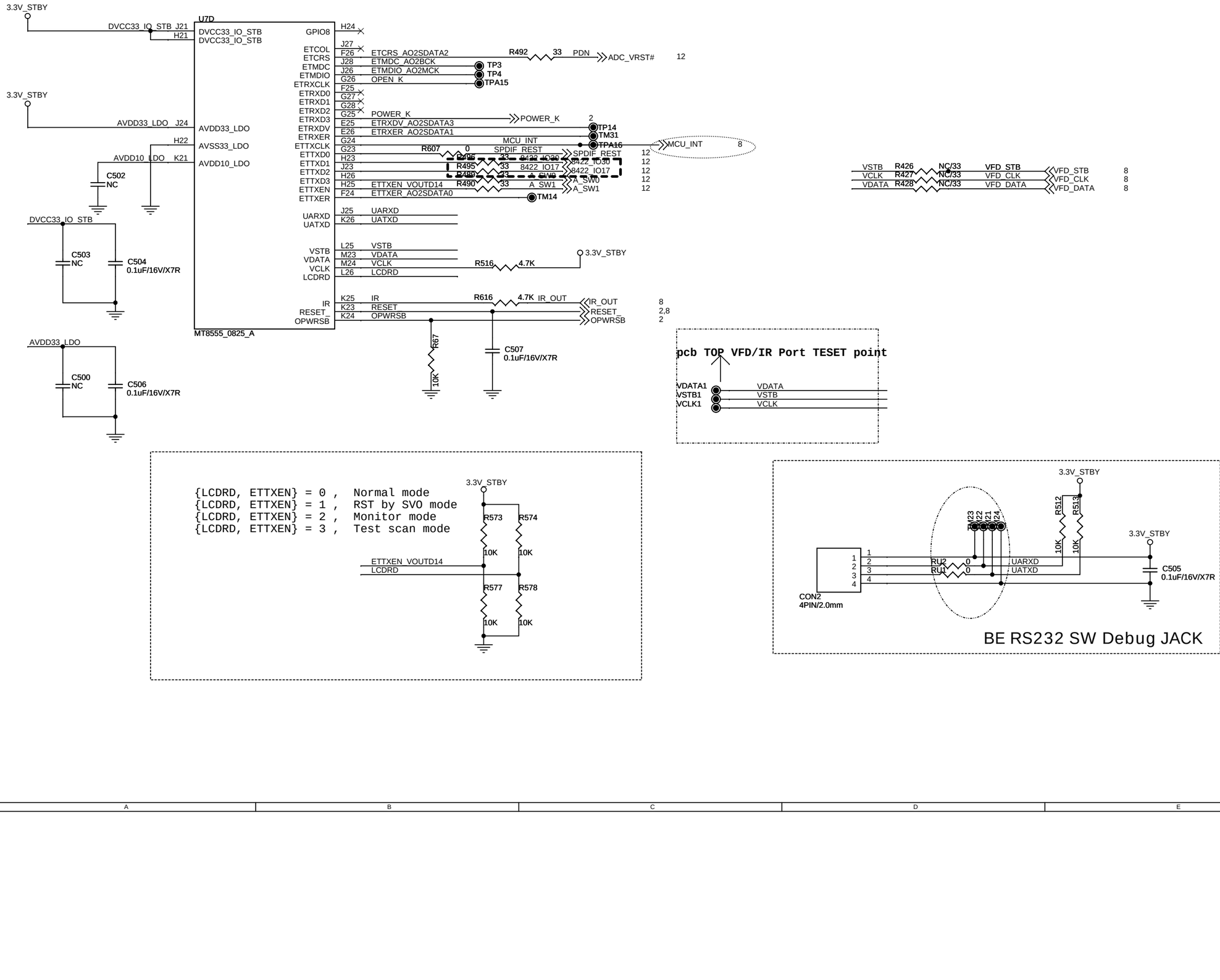
NFALE	NFALE_R
NFCEN	NFCEN_R
NFCLE	NFCLE_R
NFRBN	NFRBN_R
NFREN	NFREN_R
NFWEN	NFWEN_R

GPIO0	R441	NC/470	USB_EN0#
GPIO1	R442	NC/33	USB_OC0#
GPIO2	R445	1K	USB_EN2#
GPIO3	R447	33	USB_OC2#
GPIO4	R448	NC/33	TGPIO4

TP91

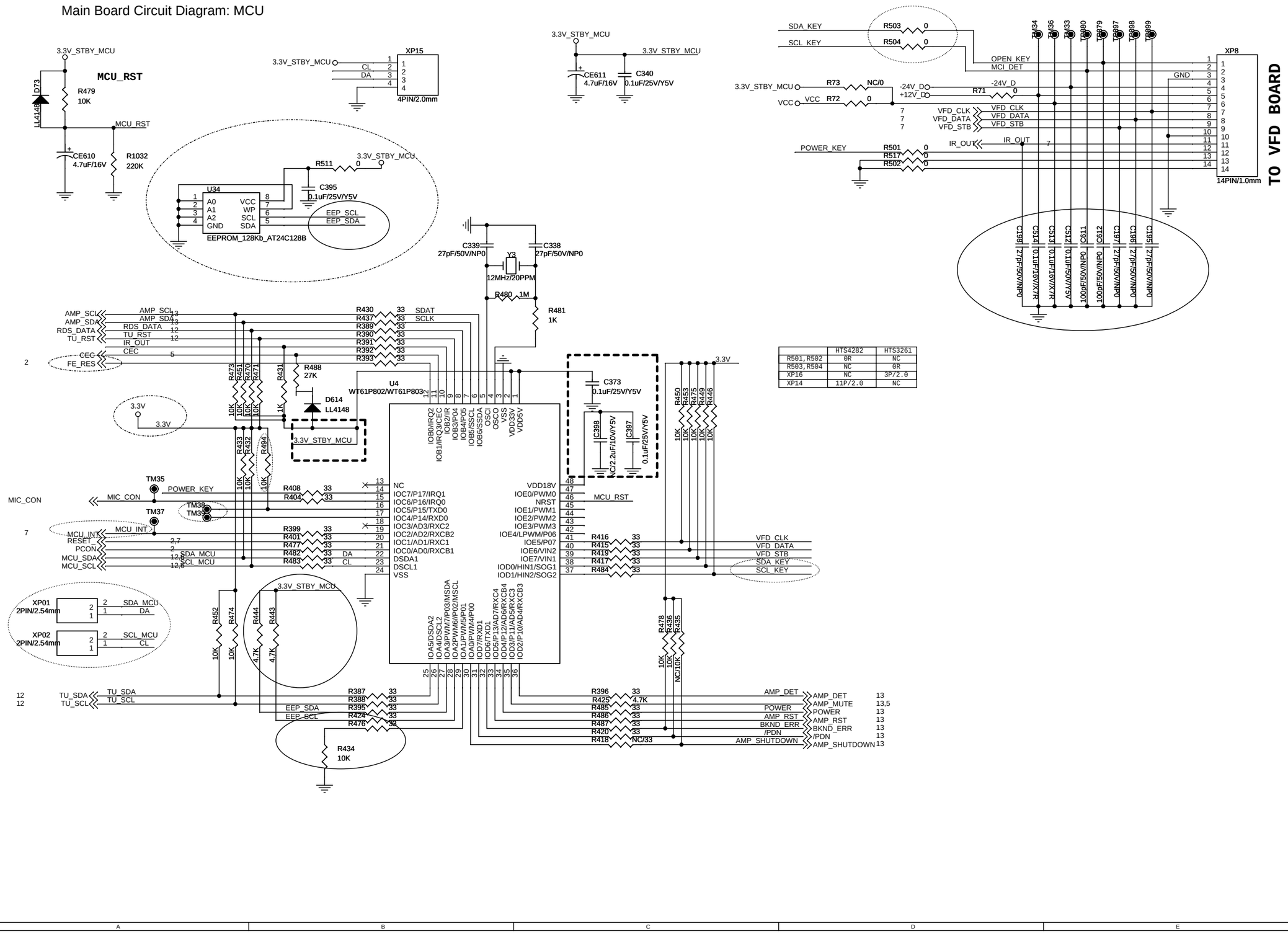
7-10

Main Board Circuit Diagram: MT8555_VFD / IR



7-11

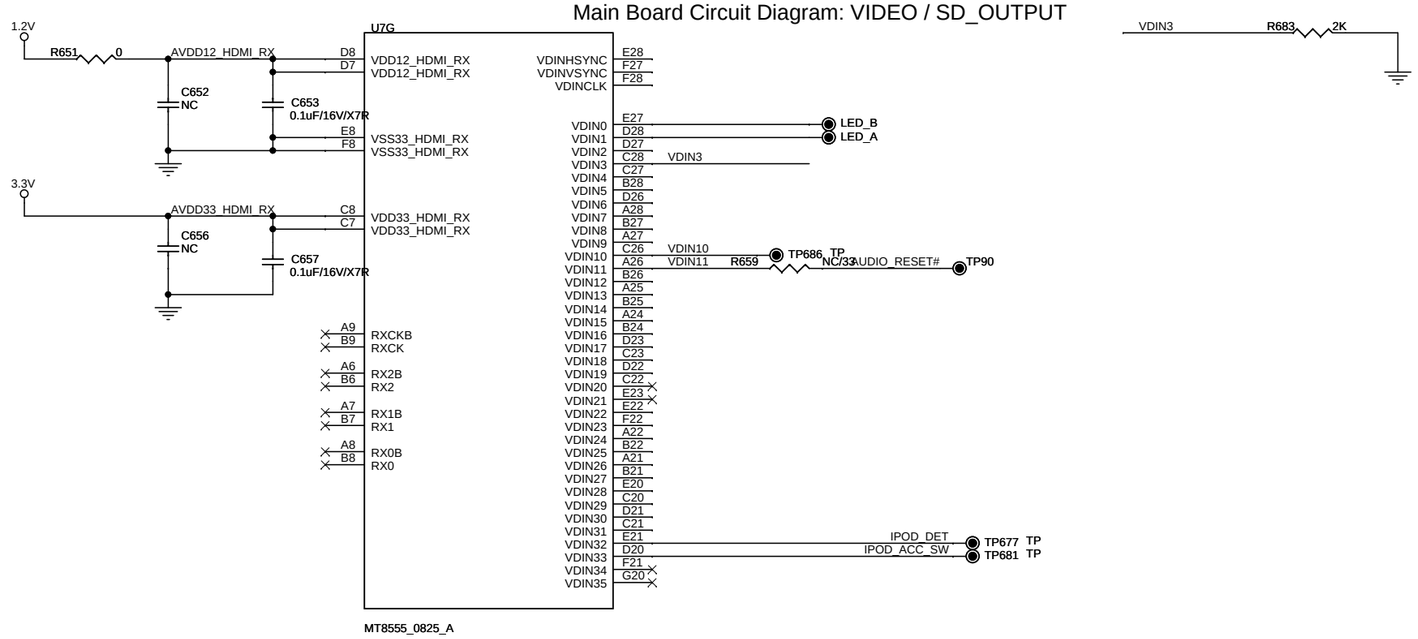
Main Board Circuit Diagram: MCU



	HTS4282	HTS3261
R501,R502	0R	NC
R503,R504	NC	0R
XP16	NC	3P/2.0
XP14	11P/2.0	NC

7-12

Main Board Circuit Diagram: VIDEO / SD_OUTPUT



7-13

Main Board Circuit Diagram: MT8555_FE

FE RS232 Port

XP2
4PIN/2.0mm

RESET

Reserved for FE POWER

ALL PINS NEED TEST POINT

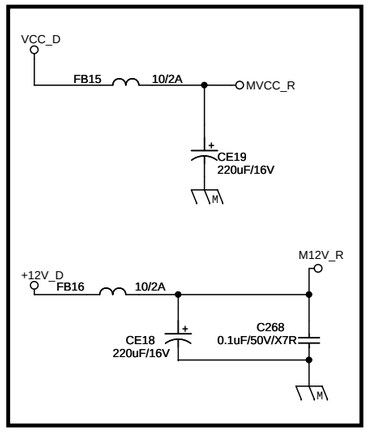
add for large current

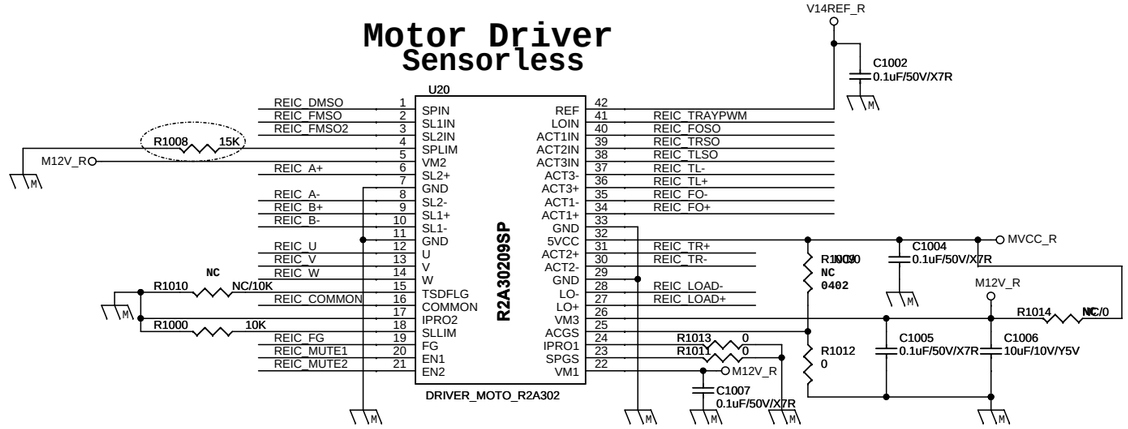
3200 is 39, too

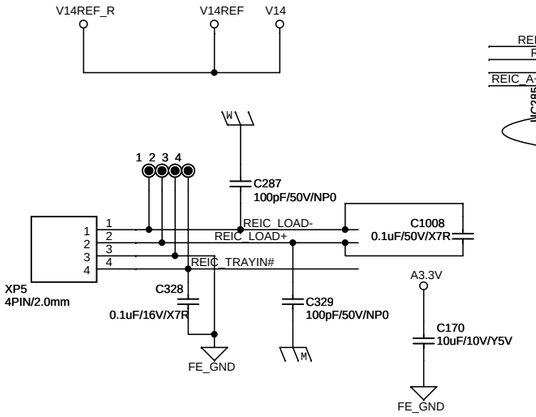
7-14

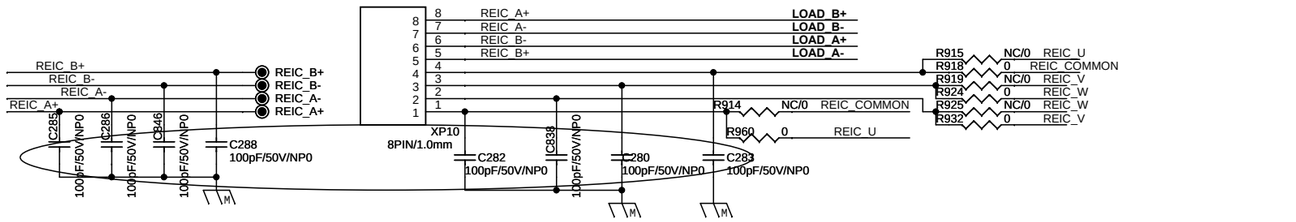
Main Board Circuit Diagram: MOTOR_DRIVER

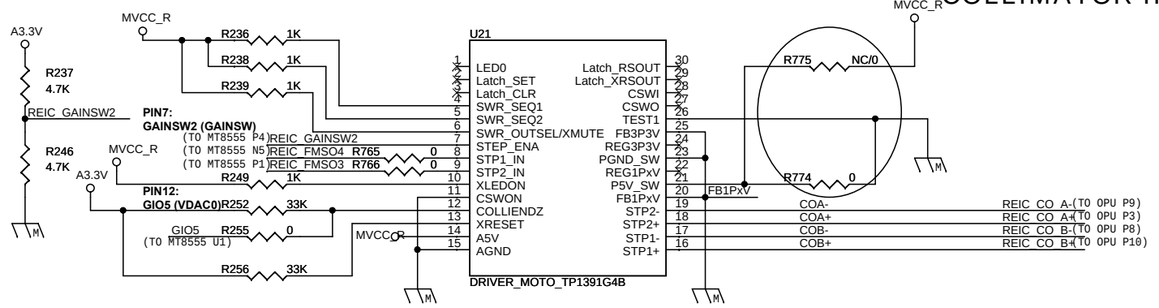
Motor Driver Sensorless











sanyo 414H08	R915	R919	R925	R914	R947	R962	NC
	R918	R924	R932	R960	R946	R961	0 R
Hitach HOP-B1350	R918	R924	R932	R960	R946	R961	NC
	R915	R919	R925	R914	R947	R962	0 R

When use Hitach OPU R863 is 10K

7-15

Main Board Circuit Diagram: AUDIO / IN

A_SW0	A_SW1	Mode
L	L	Tuner
H	L	MIC
L	H	CH3(MP3)
H	H	CH1(Aux)

For No Karaoke Model

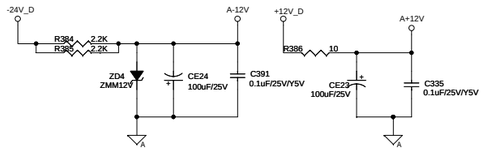
Swap I/O pin.

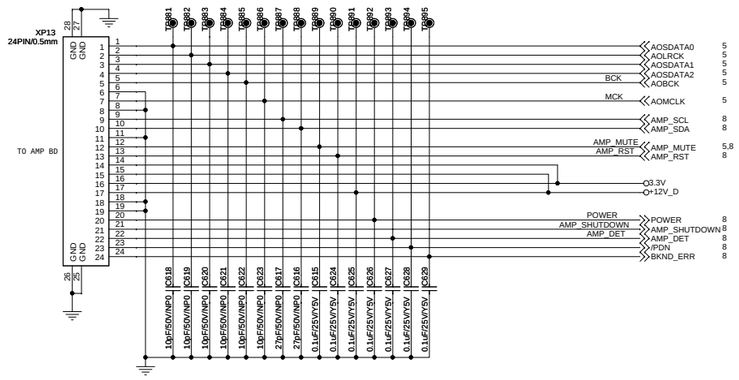
From pin5 to pin6

DLL R362 Add R397

7-16

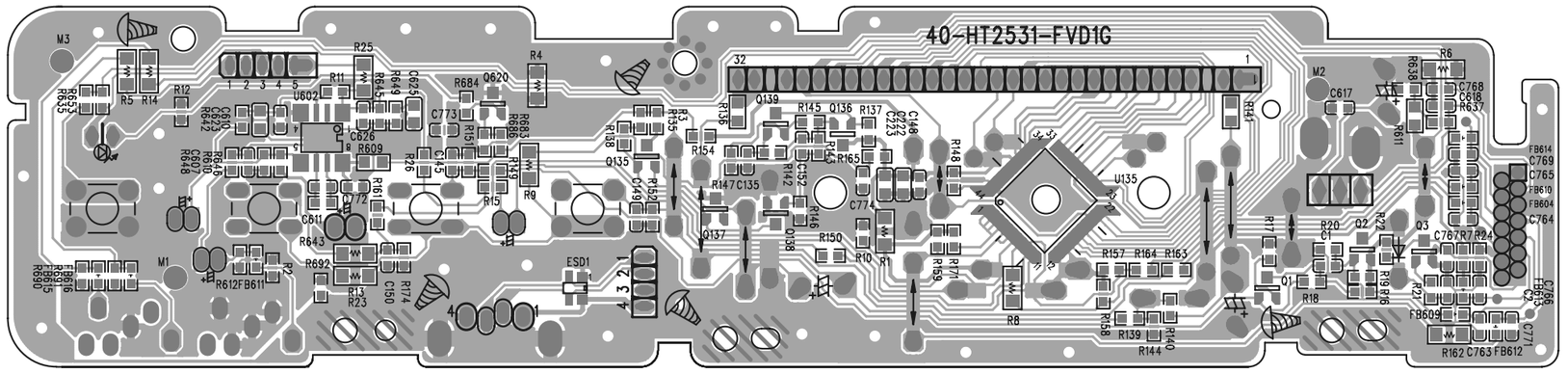
Main Board Circuit Diagram: AMP_OUT





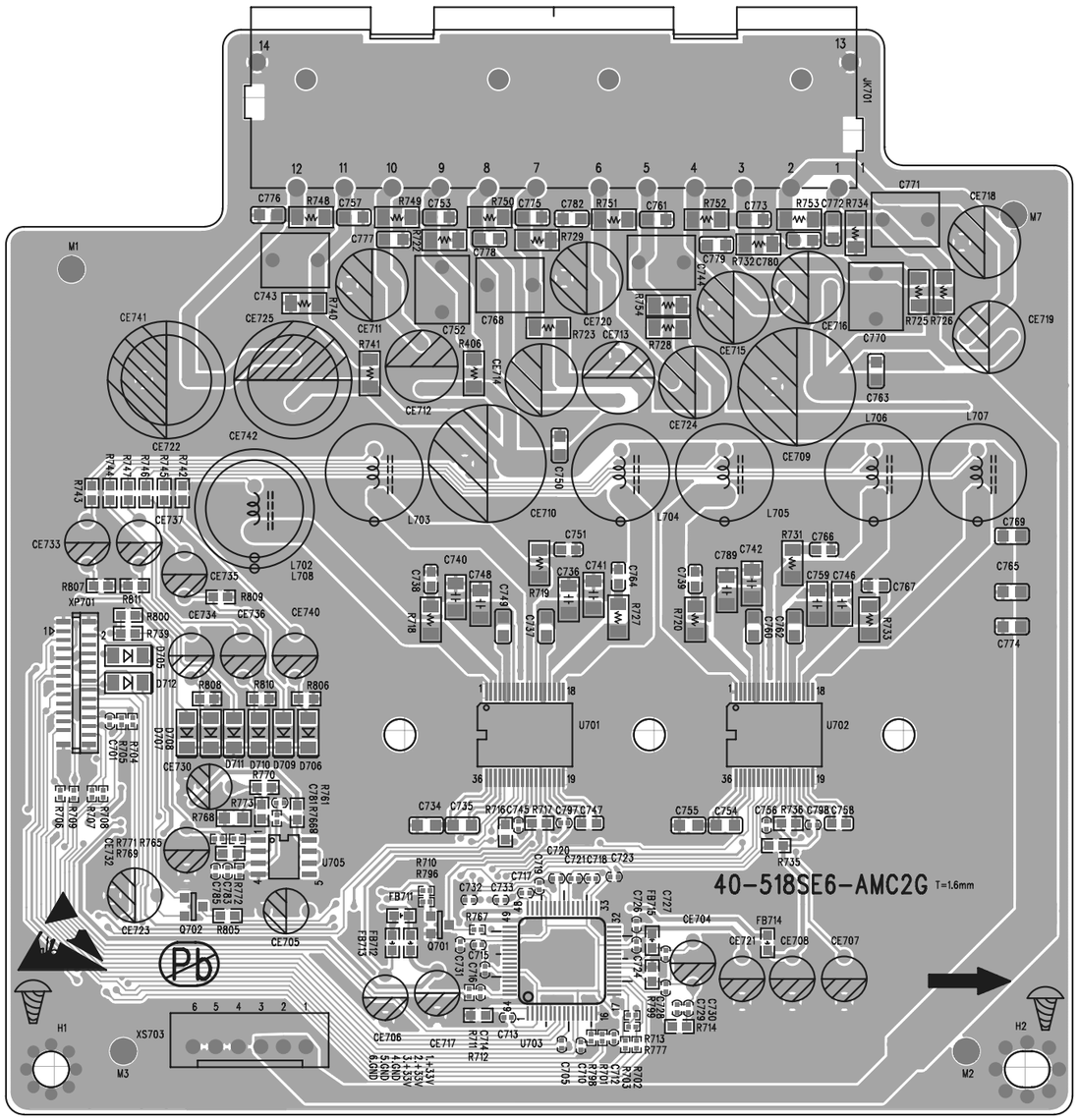
7-17

Front Control Board Print-layout (top side):



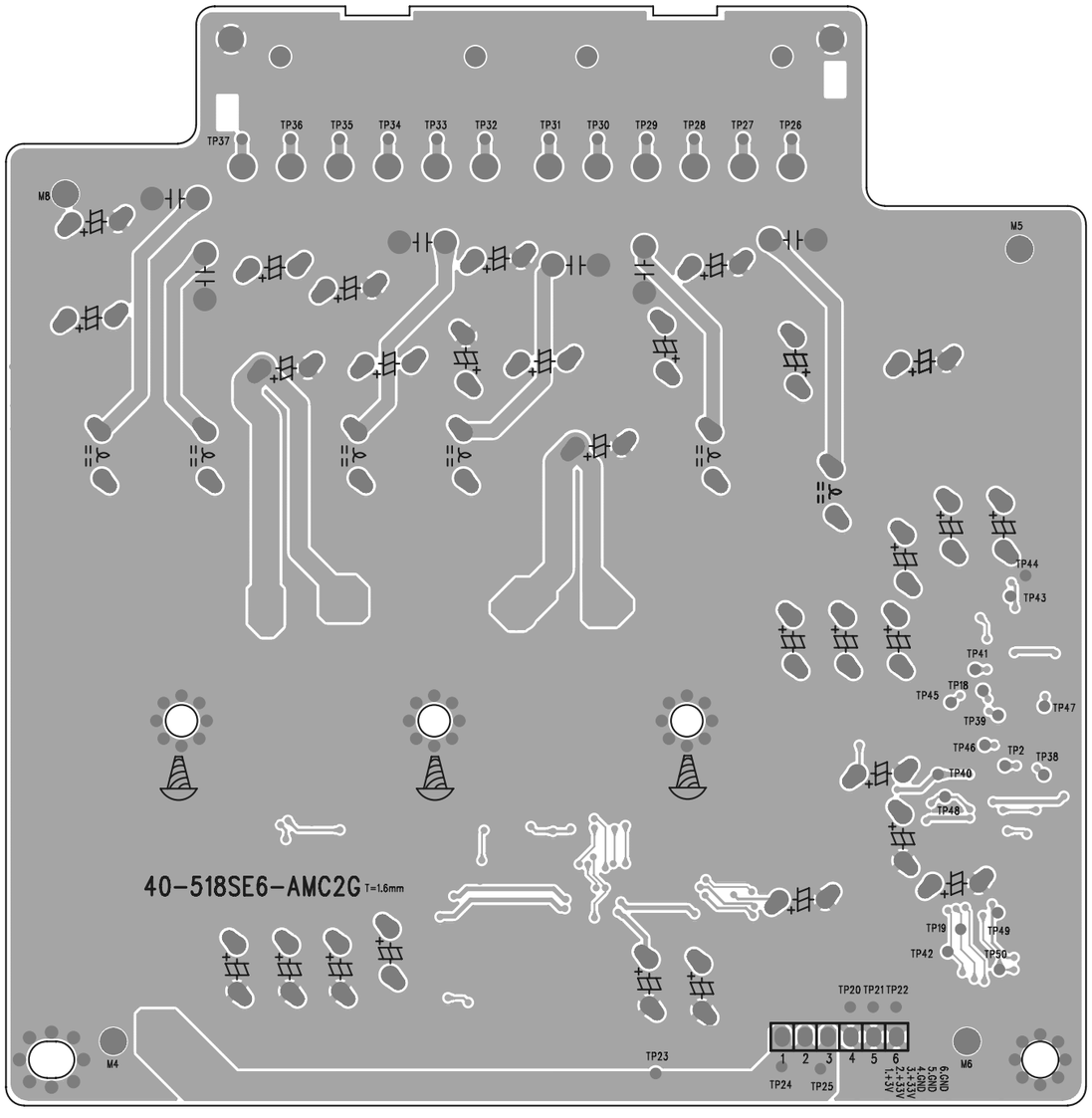
7-18

Amplifier Board Print-layout (top side):



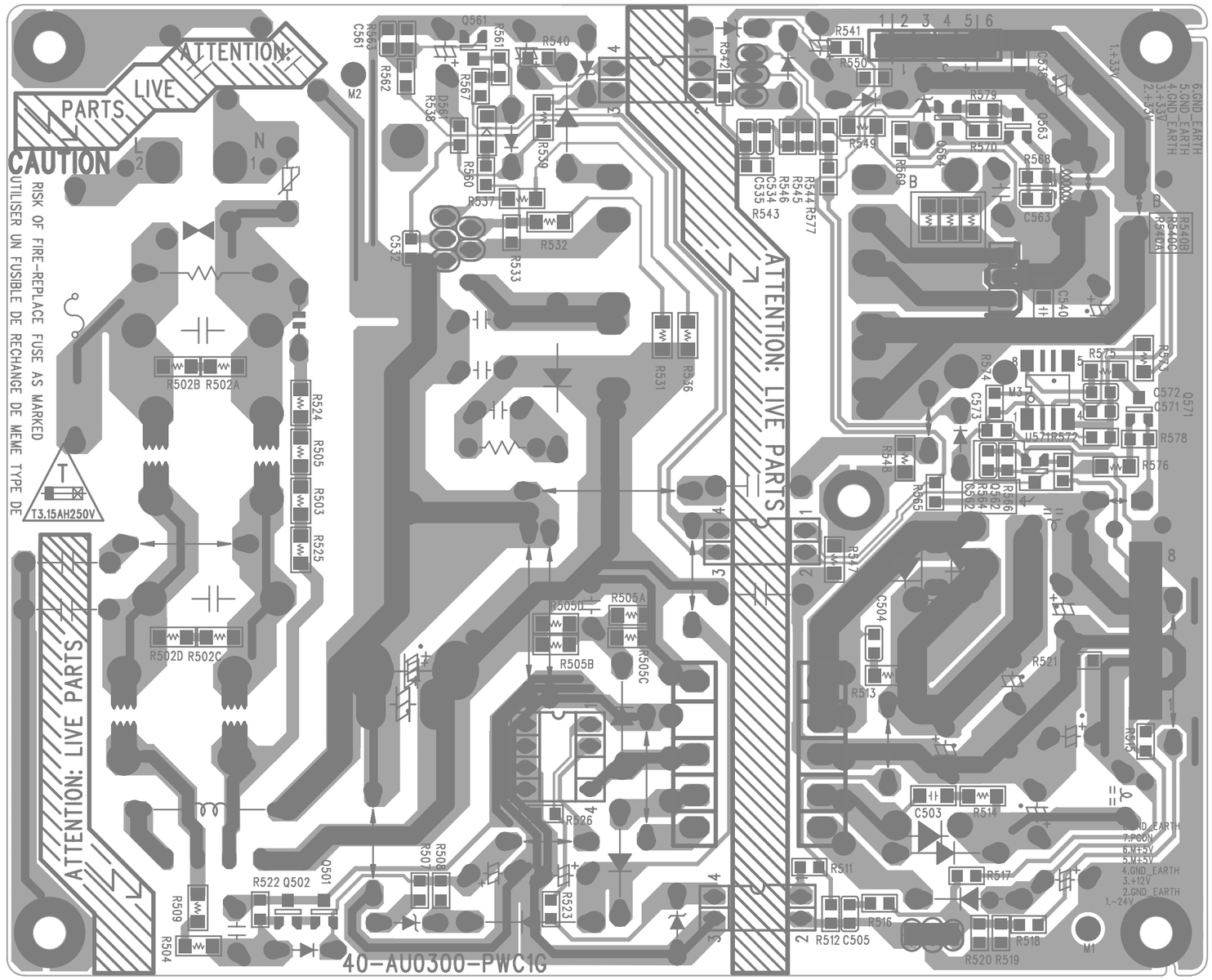
7-19

Amplifier Board Print-layout (bottom side):



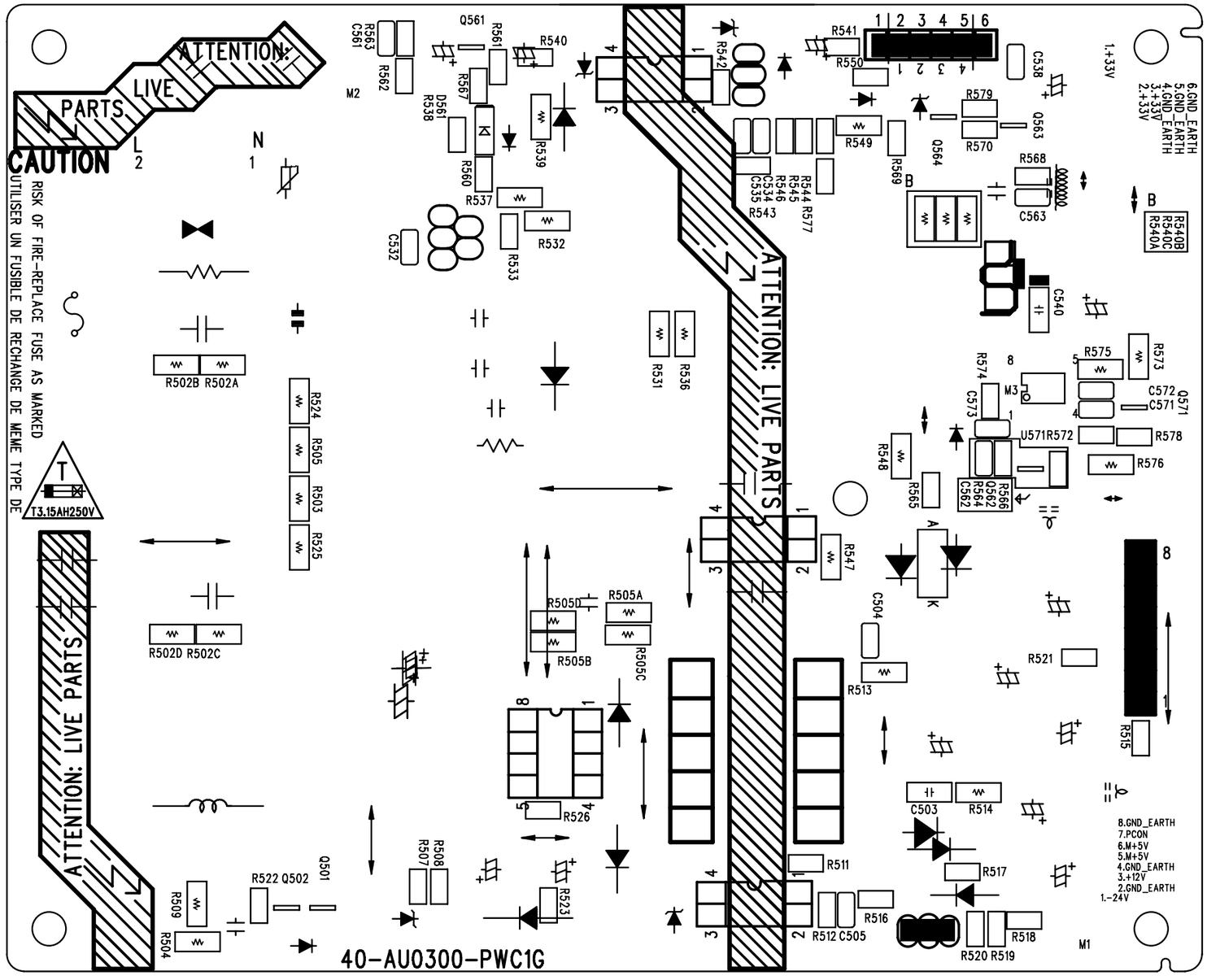
7-20

Power Supply Print-layout (top side):



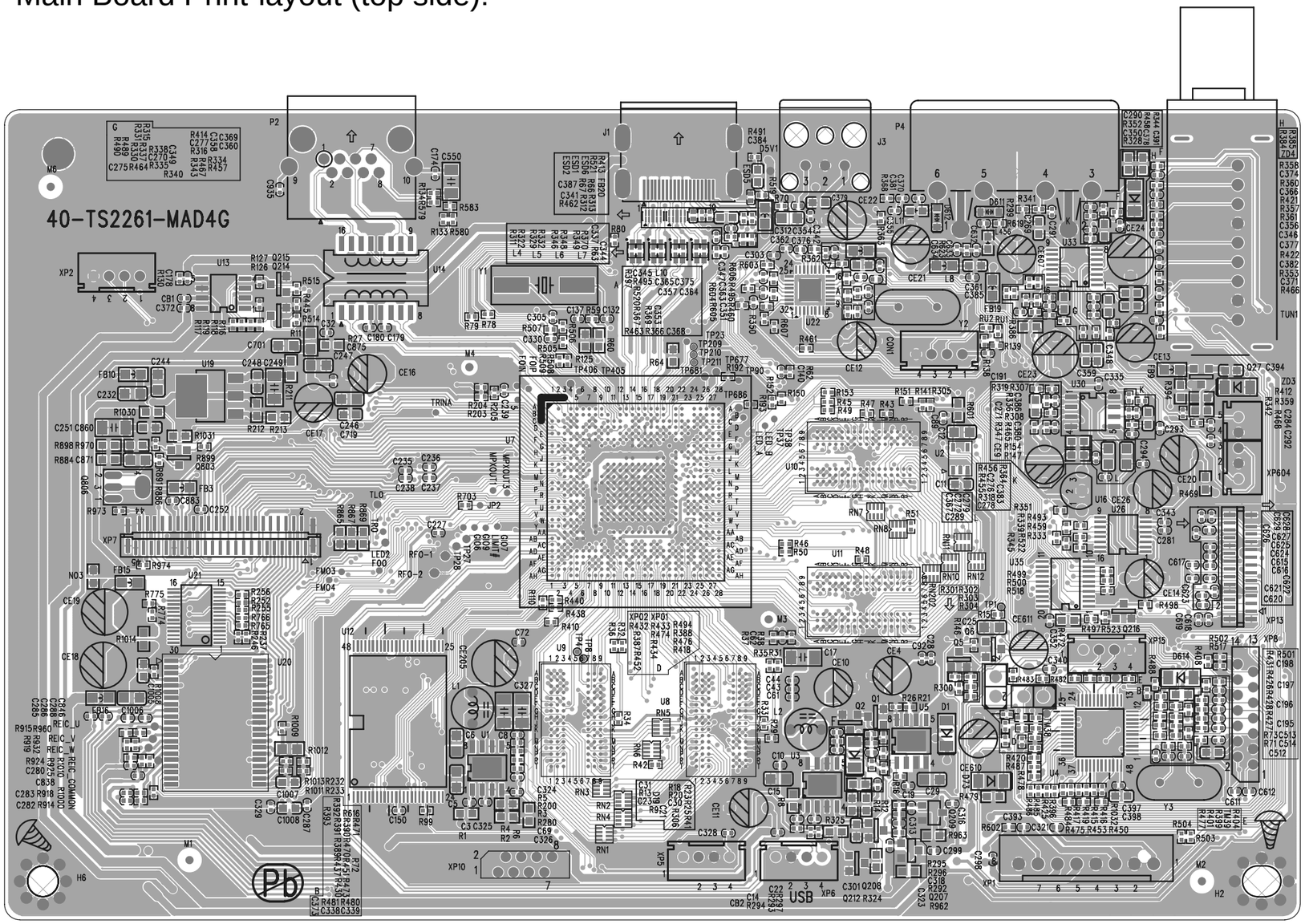
7-21

Power Supply Print-layout (bottom side):



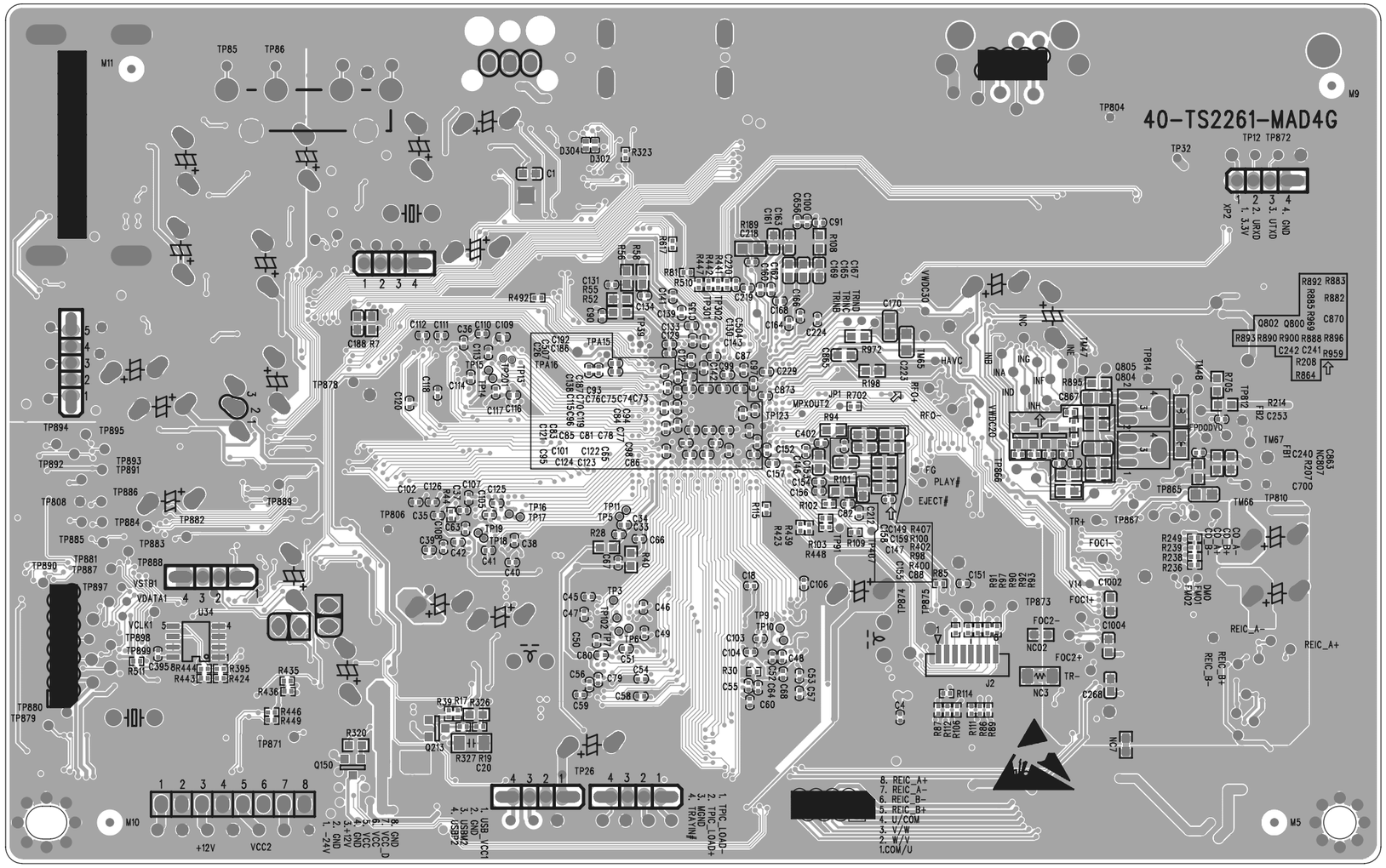
7-22

Main Board Print-layout (top side):

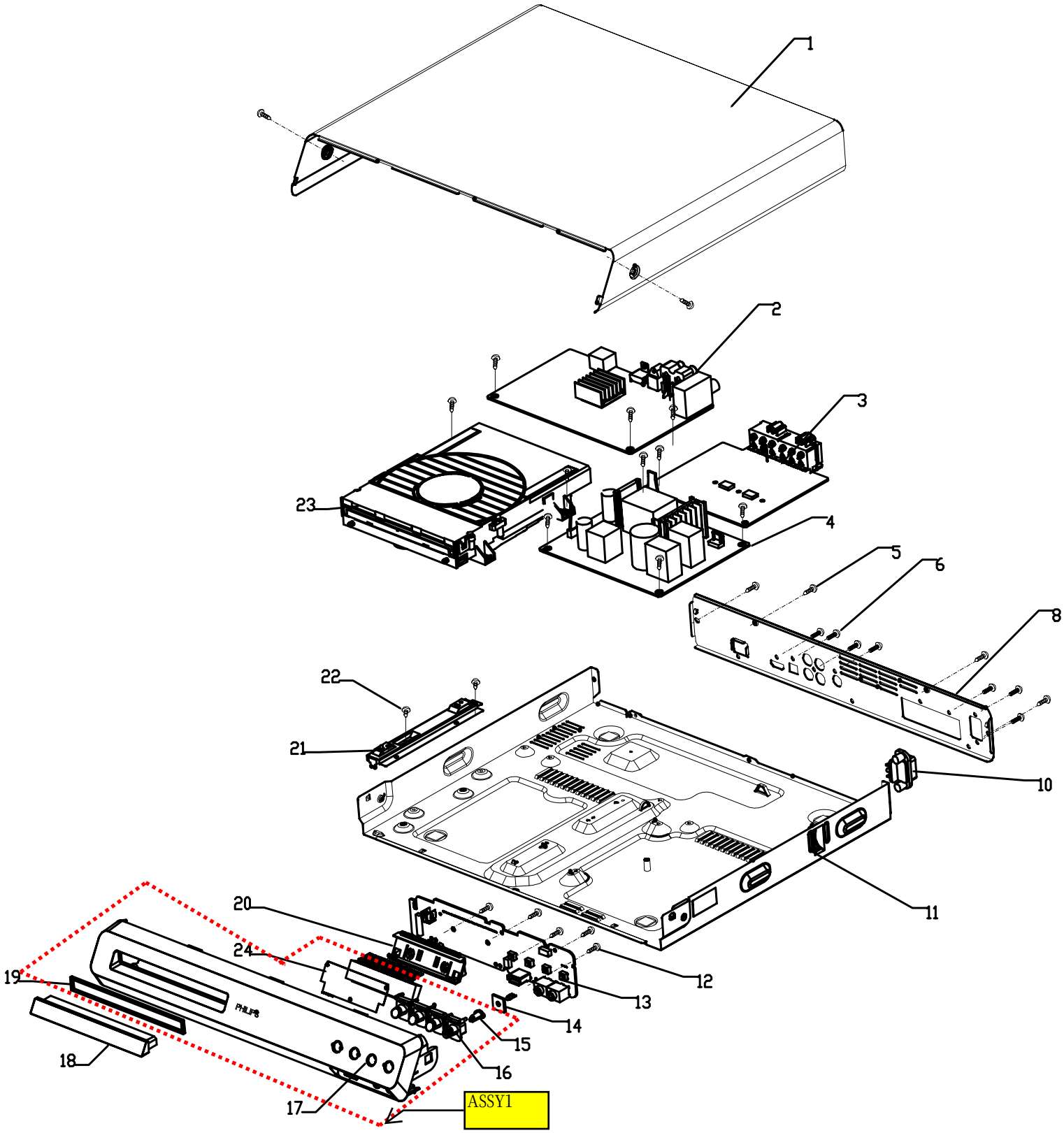


7-23

Main Board Print-layout (bottom side):



EXPLODED VIEW FOR HTS3541/05/12/51/55/78/93/98/79/X78:



This is general mechanical exploded view .Please refer to the model set for the detailed information.

ASSY1 includes components :15,16,17,19,24

REVISION LIST

Version 1.0

* Initial release for HTS3541/05/12/51/55/78/93/98

Version 1.1

* Initial release for HTS3541/79

Version 1.2

* Initial release for HTS3541X/78